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THE UNIVERSITY OF ALBERTA

SMOKING IN PREGNANCY: THE EXPECTANT MOTHER'S PERSPECTIVE

by

Ⓒ PAULA FINLAYSON

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA
FALL, 1988

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled SMOKING IN PREGNANCY: THE EXPECTANT MOTHERS' PERSPECTIVE submitted by PAULA FINLAYSON in partial fulfillment of the requirements for the degree of Master of Nursing.

Peggy Anne Field
(Supervisor)

Rosemary Liburd

Jean Innes

R. G. McIntosh

Date: 28 July 1988

DEDICATION

To all the pregnant women who have stopped smoking and to those who have almost stopped smoking. To their daughters and to all those who believe in promoting women's health.

ABSTRACT

This study examined and described the expectant mothers' perspective on prenatal smoking. The purpose of the study was to develop a beginning understanding of the purpose smoking holds for the expectant mothers, in light of the anti-smoking information and education available. The ethnographic methods of non-participant observation, taped interviews and a smoking diary were utilized as methods of data collection. Analysis of this data described prenatal smoking from "inside" the expectant mothers' experience.

The most significant purpose of continued smoking during pregnancy was shown to be the maintenance of control. The issue of smoking for control was shown to be significant at the time of smoking initiation, during cessation attempts and during pregnancy.

Four interrelated factors were shown to influence smoking and to contribute to the need for control. Personal factors were private and internal feelings. Social factors were factors related to communicating with others. Habitual factors were marked by custom and repetition and addictive factors involved a need or compulsion to smoke. Smoking was regarded by the informants as a method to control each of these factors. This appeared to be a strategy utilized to suppress the discomfort of having no control. Rather than address this feeling, these women smoked.

Health education regarding smoking during pregnancy was found to create cognitive dissonance and was shown to

require control as well. Justification for continued smoking, denial of the risks of continued smoking and risk taking were identified as three mechanisms which were developed in order to control cognitive dissonance following health education.

Further research is crucial in order to validate and quantify the influence of these factors. However, description of the factors influencing smoking and the purpose smoking holds for expectant mothers begins to inform us regarding the need to assess current prenatal teaching practice.

ACKNOWLEDGEMENTS

A thesis does not get written without the support of friends, family and colleagues. I have many to thank. First, thank you to the thirteen women who gave so willingly of their time and gave me the opportunity to learn about smoking during pregnancy.

Thank you to the members of my thesis committee, to Dr. Peggy Anne Field for your creative ideas, your insights and your expertise; to Professor Jean Innes for your keen interest in the study and for sharing with me your vision of public health and to Dr. Rosemary Liburd for your friendship, your interest and your shared concern for women and their health. Thank you to Dr. McIntosh for your last minute involvement with the committee. Your insights were very helpful.

Thank you to my friends and colleagues at the Edmonton Board of Health. Your continued support and interest has helped to facilitate the process.

Thank you to my parents for the belief that your kids could do anything and for the vacuuming, the fried chicken and the love. Thank you to my sister, who is always my personal cheering section.

To Brian, Brad and Blair Finlayson, thank you for being fun and for "jogging" my memory about what's important. To Al Finlayson, thank you for the hours at the computer.

I wish to thank my friends. First to Carole Estabrooks: thank you Carole for your friendship, your courage and your vision. Somehow you knew it would get done. To Pam Ratner and Joy Johnson, thank you for sharing ideas and for a new understanding of the meaning of friendship. To Anita Thomas, thank you for your laughter and the "think-tanks" over lunch. To Hasana Birk, thank you for your moral support and gentle and meticulous editing. To Donna Anthony, thank you for being there and helping when things were unmanageable. To Lee Cech, first thank you for your meticulous typing and editing from the first transcripts to the finished product, but perhaps more importantly, thank you for your kind encouragement through it all.

Finally, I acknowledge and appreciate the financial support of the Alberta Foundation for Nursing Research, the Alberta Association of Registered Nurses and the Department of Occupational and Community Health of the Government of Alberta.

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CHAPTER I

INTRODUCTION

STATEMENT OF THE PROBLEM

Epidemiological evidence of the harmful effects of maternal smoking during pregnancy is unequivocal. Investigation of prenatal smoking began with Simpson's report (1957) and, since that time, scientific attention has focussed on the many negative health consequences of smoking during pregnancy (Himmelberger, Brown & Cohen, 1978; Meyer, Jonas & Tonascia, 1976; Meyer & Tonascia, 1980; Prager, Malin, Speigler & Van Natta, 1984; Simpson, 1957). This research confirms the salience and magnitude of the smoking problem among pregnant women. Although the pace of the research activity has accelerated and continues today, the impact on smoking in pregnancy has not been as great as thirty years of research might lead us to hope (Windsor & Orleans, 1986).

Recent documented changes in adolescent smoking creates concern. While the prevalence of smoking in adolescent males has remained fairly constant or has declined, the prevalence of smoking in adolescent females has increased (Edmonton Board of Health, 1986; Rodgers & Collishaw, 1986; Urberg & Robbins, 1981). Additional evidence indicates that persons who become habitual smokers during adolescence are likely to remain smokers in adulthood (McKennel & Thomas, 1969). The significance of this trend becomes especially serious when adolescent females who smoke become expectant mothers (Windsor & Orleans, 1986).

Investigators interested in the effects of smoking, and in smoking cessation research and program development, have examined several factors in an attempt to understand and predict which treatment would be better for a particular smoker. Some believe the answer lies in clarifying the nature of smokers and smoking in such a way as to suggest a possible means of intervention (Christensen & Glover, 1983; Jordan-Marsh & Neutra, 1985; Linn & Stein, 1985; Loken, 1982; McManus & Weeks, 1982; Pedersen, Wanklin & Baskerville, 1984; Urberg & Robbins, 1984; Windsor, Heard, Reese, Morris & Bartlett, 1984). These researchers have concerned themselves with the psychological, physiological, sociological and medical aspects of smoking behaviour. They have taken a unidimensional, causal approach that allows for precise statistical analysis. However, these studies are limited because they cannot explicate the complexities inherent in the smoking phenomenon. Therefore, a major gap in nursing knowledge is apparent in this research literature. While considerable work has been done regarding smoking behaviour, the above investigators have identified and measured predetermined variables and searched for causes from an etic or world-view perspective. Thus, the investigators have defined the factors they believe to be important in relation to smoking behaviour. These factors may not be the factors important to the smokers. We remain uninformed about the importance as described by smokers, of many factors related to smoking.

Only one study was found that could provide health educators with an understanding of prenatal smoking from the pregnant smoker's perspective. Graham (1976) compared the perspectives of twelve prenatal smokers to that of health educators and media educative sources regarding prenatal smoking. She found that the assumptions of the educators that prenatal smokers were ignorant and lacked information with regard to the risks of smoking during pregnancy to be in direct opposition to the reality of the prenatal smokers. The smokers in her study were well informed of the risks inherent in prenatal smoking. They identified several different reasons for continued smoking, none of which were addressed by the health educators. Because individuals act on their own interpretation of events, it is important to include this subjective perspective in a study of prenatal smoking behaviour. Indeed, it is a prerequisite if health educators are to effectively assist expectant mothers to stop smoking.

THE PURPOSE

The purpose of this study was to explore and describe the experience of prenatal cigarette smoking from the perspective of prenatal smokers. The findings of this study begin to assist nurses in understanding some of the reasons expectant mothers continue to smoke in light of available prenatal education.

THE RESEARCH QUESTIONS

The following questions were addressed:

1. What perception does the expectant mother who smokes during pregnancy have about smoking behaviour?
    a) What does she perceive to be the influences on her smoking behaviour?
    b) What purpose does she believe smoking holds for her?
    c) How does she perceive the risks of smoking during pregnancy?
    d) How does she weigh the perceived risks and perceived purposes so that she continues to smoke during pregnancy?

CHAPTER II

LITERATURE REVIEW

Smoking is a phenomenon about which much has been written. Nursing literature, however, has rarely addressed smoking behaviour nor has it specifically addressed smoking during pregnancy (Langford, Thompson & Tripp, 1983; McRae & Choi-Lao, 1978). The behavioral sciences literature is the primary source of smoking research. Frequently, nurses have "borrowed" results from this research, and used this information to develop smoking cessation strategies for prenatal teaching programs.

Smoking in pregnancy has most frequently been explored in survey and experimental style research. These research methods frequently rely on retrospective self-reports and memory for data. Some degree of under-reporting can be assumed with these methods. As well, deductive research methods rely on predetermined variables believed to be related to smoking, and consequently preclude the examination of other potential factors excluded from these theoretical frameworks.

Few studies have addressed the possible influence of gender differences in smoking behaviour (Christen & Glover, 1983; Jacobson, 1981; Jarvie, 1984; Urberg & Robbins, 1981). Aside from addressing the untoward consequences of prenatal smoking, only one researcher has addressed the possibility of pregnancy as a unique temporal factor with regard to smoking behaviour (Graham, 1976). There are then, gaps in nursing knowledge. Conclusions must be limited and questions must arise about the certainty with which this knowledge ought to guide nursing practice.

The following literature review will summarize selected existing literature and demonstrate how this study contributes to the nursing knowledge of prenatal smoking behaviour. The literature will be reviewed in three sections: the first section will analyze the literature describing the untoward fetal outcomes associated with maternal smoking; the second section will address the possible determinants of smoking, and the third section will examine health education and specifically the smoking cessation programs intended to alter the pregnant woman's smoking behaviour.

PRENATAL SMOKING: THE UNTOWARD EFFECTS

During the last thirty years, since Simpson (1957) first reported that new-borns of women who smoked were significantly smaller than those of non-smoking mothers, evidence of the untoward effects of maternal smoking on pregnancy outcomes has increased substantially.

Of the 4,000 compounds identified in cigarette smoke (Henningfield, 1984), the two most studied substances are nicotine and carbon monoxide (Naeye, 1981). Nicotine is a vasoconstrictor and is known to produce apnea in the fetus

(Haworth, 1973; Naeye, 1981; Rayburn, Wible-Kant & Bledsoe, 1982). Like nicotine, carbon monoxide will cross the placenta readily. It's toxicity probably relates to its impairment of tissue oxygenation (Longo, 1977). Thus carbon monoxide leads to an hypoxic state in the fetus and likely affects fetal weight-gain and development (Haworth, 1973; Naeye, 1981).

Previous research has established with relative certainty, that maternal smoking is related to several adverse fetal outcomes. First, smoking has been shown to be related to a decrease in birth-weight (Meyer, Jonas & Tonascia, 1976; Prager, Malin, Speigler, Van Natta & Placek, 1984; Simpson, 1957). Smoking has been shown to be related to an increase in the incidence of stillbirths and spontaneous abortions (Himmelberger, Brown & Cohen, 1978). Smoking has been shown to be related to increased perinatal mortality (Butler, Goldstein & Ross, 1972; Meyer & Tonascia, 1980; Russell, Merriman, Stapleton & Taylor, 1983) and to increased premature rupture of the membranes, abruptio placenta and placenta previa (Underwood, Kesler & O'Lane, 1967).

From an extensive review of the literature, McIntosh (1984) summarized the relative risks of adverse outcomes in pregnancy, including attributable risks and proportions. The twelve outcomes appear in Table I. The relative risks for smokers compared with non-smokers varied from 1.8 for

TABLE I

Adverse Maternal Outcomes of Pregnancy Related to Smoking

Table 1 has been removed due to the unavailability of copyright permission.

From: McIntosh, I. D. (1984). Smoking and pregnancy. Attributable risks and public health implications. Canadian Journal of Public Health, 75, 141-148.

fetal growth retardation to 1.1 for spontaneous abortion. The attributable risk proportion, that is, the proportion of the unfavorable pregnancy outcomes in smokers which are attributable to smoking, varied from 45% for fetal growth retardation, to 11% for spontaneous abortion.

Data from previous research on smoking and pregnancy outcome suggest that between 5% and 25% of the unfavorable outcomes in all pregnancies may be attributed to smoking (McIntosh, 1984). The term "fetal tobacco syndrome" has recently been coined to refer to the specific conditions that result from prenatal exposure to smoking (Nieburg, Marks, McLaren & Remington, 1985, p. 2998).

The adverse health effects of maternal smoking on offspring go beyond the immediate outcomes of pregnancy. Smoking during pregnancy has been shown to be adversely associated with respiratory disease in the first year of life of the new-born (Pedreira, Guandolo & Feroli, 1982), with lower Apgar scores at birth, and with Sudden Infant Death Syndrome (Abel, 1985). It has also been shown to be adversely related to slowed mental development, to hyperactivity, short attention span and lowered scores on reading and spelling tests in children whose mothers smoked during pregnancy (Naeye & Peters, 1984).

Opinion is divided about whether smoking is causally related to untoward pregnancy outcomes. Yerushalmy (1971) found several key differences in the lifestyle of pregnant smokers and non-smokers which led him to reason that the untoward pregnancy outcomes were more a result of lifestyle than smoking. Scott, English and Samson (1983) showed a relationship between lifestyle and smoking: that 60% of the smokers in their study were inadequately nourished in contrast to 43% of the non-smokers; that smoking mothers were twice as likely to be underweight for height before pregnancy, and that smoking mothers tended to use more alcohol and report inadequate food finances. Enkin (1984) concurs. He suggests that women who became smokers had a high evidence of low birth-weight babies even before they started to smoke, that a smoker was more likely to be from a lower socioeconomic class, that she is, on average, taller but lighter than a non-smoking woman, that she had a higher twinning rate and that she was less likely to have planned her pregnancy. She was more likely to drink coffee, beer and whiskey than a non-smoker, and to indulge in these in excess. She was more often unmarried and the pregnancy was less often desired. He suggests that these factors may, in themselves, have significant effects on the pregnancy.

However, other investigators have controlled for the possible social factors that may contribute to untoward outcomes and found smoking to be an independent factor (Abel, 1985; Alexander, 1986; Russel, Taylor and Low, 1968). Additionally, Butler, Goldstein and Ross (1972) have proposed that women who stopped smoking early in pregnancy delivered children in the same weight range as non-smokers. These investigators argue a causal relationship between untoward pregnancy outcomes and smoking.

In the face of modern cessation methods, and accessibility to information, and given the weight of the literature, a surprising twenty to forty percent of the pregnant female population are smokers (Gordon, 1985; Luoto, 1983). If the current trend indicating increased smoking among young women continues (Edmonton Board of Health, 1986; Rodgers & Collishaw, 1986), it is likely that pregnancy will not change the behaviour for many (Rantakallio, 1983). The question that must be raised for social scientists, nurses and all health educators is, "Why do pregnant women continue to smoke when the risks are high?" Researchers in psychology attempted to answer this question in the 1970s and some major studies will now be reviewed.

PSYCHOLOGICAL FACTORS

Studies conducted within the framework of psychological models have explored the psychological and personality characteristics of smokers in an attempt to understand these factors as possible contributors to the use of cigarettes. The underlying assumptions within these studies is that to understanding personality and psychological factors will aid health educators in the development of appropriate treatment modalities specific to the psychological and personal characteristics of smokers.

Tompkins (1966) suggests that the key to understanding smokers and smoking is to understand how people manage affect. Excitement, enjoyment, anger, fear and shame are the affective states he suggests are managed by smoking. He perceives smoking in terms of its relaxant, stimulant and sedative effect on these affective states. From Tompkins' study, Ikard, Green and Horn (1969) developed a "Reasons for Smoking Scale" (p. 645). They advanced six reasons for smoking: craving, habit, stimulation, negative affect reduction, pleasure and manipulation, and predicted that successful abstinence was associated with lower scores on the scale.

Other researchers have shown a positive relationship between smoking, stress and anxiety (Graham, 1976; Linn & Stein, 1985; Ockene, Nutall, Benzari, Ockene & Hurwitz, 1981; Rose, Ananda & Jarvic, 1983; Schneider & Huston, 1970; Shor, Williams, Cannon, Latta & Shor, 1981). Rose et al. (1983) showed distress as one of the most frequently reported cues for cigarette smoking. Schneider and Huston (1970) suggested that smokers scored higher on anxiety scales than did non-smokers. Christen and Glover (1983) addressed the use of cigarettes for tension reduction and noted gender differences. They suggested that while both men and women smoke for the satisfaction of tension reduction, women smoke more frequently for this reason than men. Smoking as a way to relieve pressure and as a coping skill has also been reported in the literature (Linn & Stein, 1985; Shor et al., 1981). Such personality characteristics as extroversion (Eysenk, 1965), autonomy (Simon & Primavera, 1976) psychoticism (or tough mindedness) and neuroticism (lability) (McManus & Weeks, 1982) have also been considered. It has been proposed that smokers are more extroverted (Eysenk, 1965), need more autonomy (Simon & Primavera, 1976) and have more neurotic (labile) and psychotic (toughminded) symptoms than non-smokers (McManus & Weeks, 1982).

While several psychological and personality factors have emerged with respect to smokers and non-smokers, this approach has not been profitable for many reasons: the correlational nature of the research which accounts for small amounts of variance ascertains only that a relationship exists between a given personality and/or psychological trait and smoking behaviour. Interventions cannot be based on a small relationship. Further, these investigators have failed to explore for the potential influences of social, environmental and physiological factors. Additionally, most personality studies have considered men and women as a homogeneous group, rarely differentiating between the sexes. Further, no studies were found that addressed psychological factors specific to pregnancy as a potentially unique time.

SOCIAL FACTORS

Social factors are defined for the purpose of this study as the presence or absence of interpersonal cues in the smoker's environment that are thought to be associated with smoking behaviour. Significant others in the smoker's social environment have frequently been addressed in the literature (Graham, 1976; Gunn, 1983; Janis & Hoffman, 1982; Wagner, 1985). Two opposing concepts emerged following a review of this literature: first, significant others are often perceived as support for smoking cessation. The opposing view suggests that significant others are additional stress in one's environment and are reasons for continued smoking.

Spousal support for quitting smoking has long been thought to help women quit smoking; however, neither living with a smoker, nor having high support and high interest from a spouse have been shown to have influence on success rates (Gunn, 1983; Janis & Hoffman, 1982). Janis and Hoffman (1982) found a higher long term cessation rate among subjects who were assigned a partner who provided support for smoking cessation than those who had no support. Conversely, Langford et al. (1983) measured six interpersonal and social variables to determine whether or not statistically significant relationships existed between these variables and which might influence successful smoking cessation for a pregnant woman. They included such variables as the partner's encouragement for quitting and the smoking status of the partner. Surprisingly, they found only the partner's occupational level and whether the expectant mother knew someone whose health had been affected by smoking to be related to whether a woman continued to smoke or stopped smoking during pregnancy. Yet, Miller, Fredricksen and Hosford (1979) showed that social interaction with a non-smoker did exert a controlling influence on the smoking behaviour of light smokers, but not on the smoking behaviors of heavy smokers.

Graham (1976) reported the presence of children in the home as an additional stressor and showed that smoking was considered by the mothers in her study as a source of stress relief during child care. However, Wagner (1985) found that nurses who were parents had a greater incidence of success with smoking cessation than nurses who were not parents. The parents reported that the presence of children was a source of motivation to quit, that..."setting an example"...(p. 60) was the major reason for smoking cessation.

These studies begin to indicate that smokers respond to different social cues than non-smokers. The findings suggest that there is a need to tailor cessation programs around these variables; that smokers cannot be treated interchangeably. However, they too suffer the same failings as the psychological models. They are correlational in design and account for a small amount of variance. They focus rather narrowly on unidimensional factors and most often consider men and women as a homogeneous group. The possibility of bias being introduced by the use of volunteer subjects (Gunn, 1983; Miller et al., 1979) and by the lack of documentation of reliability and validity in the questionnaires used (Gunn, 1983) makes interpretation and comparison of these findings difficult.

SOCIAL LEARNING FACTORS

Three social learning models have emerged from the smoking literature as frameworks within which to understand smoking behaviors: the Health Belief Model (Becker, Drachman & Kirscht, 1974), the Locus of Control Model (James, Woodruff & Werner, 1965) and the Behaviour Intention Model (Ajzen & Fishbein, 1970). Each model will be discussed in the following section.

Health Belief Model

The Health Belief Model (HBM) is a model proposed to account for patient compliance with a broad range of therapeutic regimens. More recently this model has been utilized to develop health education regimens (Johnson & Chamberlain, 1978; Pederson, Wanklin & Baskerville, 1984; Stretcher, Becker, Kirscht, Eraker & Graham-Tomasi, 1985; Urberg & Robbins, 1984; Windsor, Heard, Reese, Morris & Bartlett, 1984). Three components of the HBM model emerge frequently in the smoking literature: a) the strength and value placed on the health belief, b) the sense of vulnerability to possible untoward outcomes, and c) self-efficacy, the belief in one's capability to perform the required behaviour leading to the desired outcome.

Self-efficacy, the belief about one's capability to perform the behaviour leading to a desired outcome is the most frequently studied component of the HBM with regard to smoking cessation (Brod & Hall, 1984; Johnson & Chamberlain, 1978; Stretcher et al., 1985). Self-efficacy has been shown to discriminate between those who join cessation programs and those who do not (Brod & Hall, 1984). Bartlett, Windsor, Lowe and Nelson (1986), although not discussing women specifically, suggest that self-efficacy is the same concept as self-confidence and that it can be impaired by such negative feelings as guilt and ambivalence regarding smoking and health. Lack of self-efficacy is considered by these authors to be a "self-fulfilling prophecy" (p. 34) that invites lack of success in smoking cessation programs. Mothersill, McDowell and Rosser (1988) concur that self-efficacy beliefs are strongly related to successful cessation.

For both male and female adults, successful cessation has been positively associated with the strength of the health belief (Pedersen et al., 1984), and with the presence of favorable health beliefs in pregnant adolescents (Urberg

& Robbins, 1984; Windsor et al., 1984). A sense of vulnerability to the negative consequences of smoking has also been positively related to successful smoking cessation in the general population (Stretcher et al., 1985).

Similar methodological problems are apparent in the Health Belief Model studies as in the psycho-social models; they are correlational in nature, they use volunteers and reliability and validity of the tools used are often not reported.

Locus of Control

Locus of control, based on Rotter's Theory of Social Learning (Wallston & Wallston, 1978), has been utilized as a predictive measure of smoking behaviour and as a predictive measure of successful smoking cessation. Locus of control scales provide a measure of the extent to which a person perceives life events as intrinsic to her/himself versus the extent to which he/she views events as determined by fate, chance or the manipulation of others (James, Woodruff & Werner, 1965).

James et al. (1965) addressed locus of control, smoking and gender differences. They showed that both male and female smokers were significantly more externally controlled than non-smokers and that the men were more externally controlled than the women. They suggest that the meaning of smoking may be different for the different sexes. Johnson and Chamberlain (1978) decreased smoking behaviour by enhancing locus of control in both men and women. Clarke, MacPherson and Holmes (1982) suggested a screening device based on locus of control perceptions for identifying and diagnosing potential young smokers.

Wallston and Wallston (1978) developed a scale intended to improve understanding of the relationship between health related behaviours and control. Their initial work established that the Health Locus of Control (HLC) was measuring a related but separate entity from the locus of control developed by Rotter. The HLC scale has been used subsequently to examine compliance and response to health education programs (Jordan-Marsh & Neutra, 1985). Jordan-Marsh and Neutra (1985) included education and skill building for weight control in their program research. They included coping skills, relaxation skills as well as diet information and found that changes in the HLC were related to successful weight loss. They suggest that an improved sense of control results in a commitment to health education programs.

Shipley (1981) suggests that HLC scales show more promise than global locus of control scales. Internal HLC subjects in his study benefitted more from smoking intervention programs than external HLC subjects. Few locus of control studies have isolated the impact of the variables of gender differences or pregnancy. Most locus of control studies, like the health belief studies, are correlational in design and the variance accounted for is limited. Many HLC studies use volunteer samples.

Rational Choice

The Behaviour Intention Model (BIM) of Ajzen and Fishbein (1970) has shown some promise in accounting for smoking behaviour. In this model the intention to engage in a given behaviour is viewed as the best predictor of undertaking the behaviour (Pender & Pender, 1986). This intention is seen as an implicit cost-benefit analysis, resulting in a decision to engage or to abstain from a given behaviour. Urberg and Robbins (1981) used this model in a study of adolescent smoking behaviour. They substantiated the model's emphasis on intention. They additionally found gender differences: female intentions to smoke were shown to be based on rebellion and autonomy needs while male intentions were shown to be based on the need for a social coping mechanism.

Several researchers have found that it was possible to differentiate between smokers and non-smokers based on their implicit cost-benefit analysis of health behaviours (Eiser & Sutton, 1977; Eiser, Sutton & Weber, 1979; Kaplan & Cowles, 1978; Kristianson, 1985). These studies place emphasis on the decisions subjects make, rather than viewing smokers as different kinds of people. Some suggest that when people choose to behave in an unhealthy way, the choice may be rational from a subjective point of view, given the beliefs and values on which the decision is premised. One study suggests a "values confrontation program" aimed at increasing the value of health might influence intentions and decisions regarding smoking (Kristianson, 1985, p. 43). Interpretation of the BIM studies is difficult due to the use of volunteer samples, variation in sampling techniques and frequent omission of reports of reliability and validity of the instruments used.

PHARMACOLOGICAL FACTORS

In the following section, studies will be reviewed which address the pharmacological, habitual and addictive qualities of cigarette smoking. Emphasis on the addictive qualities of nicotine in tobacco was apparent in the literature of the 1970's. No studies specific to maternal smoking and the addictive effect of nicotine during pregnancy were found. However, while these studies consider smokers as an homogeneous group, there can be no denial of the importance of the pharmacological dimensions of tobacco in the development of tolerance, avoidance of withdrawal symptoms and the pleasure smoking can give across the sexes.

Academic debate, in an attempt to understand smoking as either a habit or as an addiction, has continued for several years. Few studies clearly address smoking as an addiction. Glover, Christensen, Hendersen and Adams (1982) suggest that this is the case, to a large degree due to the ambiguity in the definition of addiction as it relates to smoking, because addiction varies from person to person and because addiction is impossible to measure. It is generally agreed; however, that addiction to cigarettes has both a physiological and a psychological component (Glover et al., 1982; Russell, Merriman, Stapleton & Taylor, 1983).

Russell, Peto and Patel (1974) divided smoker's stated reasons for smoking into two major dimensions, a socio-physiological dimension and a pharmacological dimension. The socio-physiological dimension refers to the sensory qualities of cigarette smoking associated with the social consequences of smoking. The pharmacological dimension refers to true dependence on the effect of nicotine.

Glover et al. (1982) similarly separated cigarette smoking into two addictive components; physiological aspects and psychosocial aspects. Physiological aspects involve the establishment of a need for a given substance. Psychosocial aspects involve the establishment of an emotional, cognitive or social belief that the substance is needed.

Glover et al. (1982) and Henningfield (1984) identified three essential components to physical addiction: a) tolerance, b) dependence and c) withdrawal. Tolerance is defined as the requirement for progressively higher doses of a substance. Dependence is defined as the process of the body becoming accustomed to a given substance and becoming dependent on it in order to function. Withdrawal symptoms appear after the body has become dependent on a substance. When the substance is discontinued, withdrawal is characterized by physical discomfort.

Henningfield (1984) suggested that cigarette smoking meets all criterion for opiate drug abuse. He describes several commonalities between opiate dependence and cigarette dependence. He lists the following commonalities: the process of acquisition and maintenance, the effect of peers and family, relapse commonalities, similar tolerance and dependence properties and the process of self-administration and the effect of deprivation. He suggests that the commonalities between the phenomena associated with the use of tobacco and drugs of abuse provide "compelling evidence that tobacco use is an orderly and addictive form of behaviour" (p. 26). He argues that "despite numerous health warnings, these criteria render untenable the theory that cigarette smoking is simply a voluntary pleasure" (Henningfield, 1984, p. 25).

The case for smoking as an addiction is supported by findings from studies describing the use of nicotine gum and nicotine injections as substitution for cigarettes (Glover et al., 1982; Henningfield, 1984; West, Hajeek, Belcher, 1987). These researchers administered nicotine through nicotine gum or nicotine injections and showed smoking to be either reduced or eliminated.

Hunt (1970) defines habit as a fixed behaviour pattern, over-learned to the point of becoming automatic and marked by decreasing awareness and increasing dependence. Glover et al. (1982) agree that there is diminished awareness and that when awareness is decreased, the individual engages in a highly automated behaviour and is often inattentive to the fact that she/he is smoking. Mothersill, McDowell and Rosser (1988) describe smoking as an "over-learned habit" (p. 29) that is maintained by numerous reinforcers related to certain aspects of past smoking behaviour patterns.

Some investigators in the smoking field hold the view that smoking is best thought of as a habit because of its learned component. They describe the learning as similar to that of learning to drive, learning to eat and learning hobbies (Glover et al., 1982). They argue that the desire for a cigarette differs from a compulsion because there is little tendency to increase the dose for the required effect, and because there are few withdrawal symptoms.

The findings of one study (Eiser, Sutton & Wober, 1978) demonstrate that the crucial criterion in deciding whether cigarette smoking is a habit or an addiction is whether the smoker feels that he/she is or is not addicted. They suggest that the "self-attribution of addiction" provides smokers with an explanation for previous failures at cessation and a subjective, valid justification for continuing to smoke even when the risks to health are acknowledged (p. 99).

In a recent study, Eiser and Van der Plight (1987) proposed that smokers who perceived smoking as a "sickness" and who identified themselves as "sick" perceived greater concern over the health consequences of smoking than those who perceived themselves as "hooked." Those who perceived themselves as "hooked" reflected a feeling of an inability to give up smoking and resentment at others' attempts at dissuasion. Those who considered themselves as "sick" as opposed to "hooked" were more likely to be successful in smoking cessation attempts. Glover et al. (1982) suggest that cigarette smoking may be considered either an addiction or a habit; that the semantic difference is of little concern to the smoker.

This section has addressed selected literature regarding the psychological, physiological and social influences on smoking behaviour. The following section addresses health education as a potential influence on smoking cessation.

HEALTH EDUCATION FOR MATERNAL SMOKERS

An established method of providing anticipatory guidance to the expectant mother is the prenatal class. It is thought that appropriate guidance and intervention at the right time can prevent or change the course of a variety of problems which could be present during the reproductive cycle (Gay & Maloney, 1985; Robataille & Kramer, 1985). However, evidence has shown that while smoking cessation education is considered by many to be an important subject for inclusion in prenatal teaching, little emphasis is being given to the topic (McRae & Choi-Lao, 1978). Choi-Lao, McRae and Hastie (1980) found that only 21% of Canadian health educators felt well prepared to deliver smoking education in prenatal classes.

Prenatal smoking intervention programs have been criticized because of the assumption of a direct link between knowledge and action as a basis on which to plan interventions. The theme that smoking is hazardous to your health has been emphasized by these programs. The underlying premise is that if mothers were adequately informed of the adverse effect of tobacco use, they would simply choose not to smoke. Although the majority of these programs have changed knowledge and attitudes about cigarette smoking, they generally have had little impact on actual smoking behaviour (King & Eiser, 1981). Some investigators have indicated that men and women smoke for different reasons (Christen & Glover, 1983; Jacobson, 1981; Jarvie, 1984), and others have postulated that primiparous women and multiparous women respond to different cues to smoke (King & Eiser, 1981), and that counselling pregnant women to stop smoking ought to be tailored and personalized to the pregnant smoker (Eiser et al., 1979; Ershoff, Aaronson, Danaher & Wasserman, 1983; Enkin, 1984; Urberg & Robbins, 1981; Windsor & Orleans, 1986). Prenatal smoking cessation programs found in the literature were rarely designed with this in mind.

Some investigators have attempted to address these issues by planning prenatal smoking cessation research and programs specific to expectant mothers and which include skill development components (Aaronson, Ersoff & Danaher, 1985; Danaher, Shisslak, Thompson & Ford, 1978; Donovan, 1977; Langford et al., 1983; Windsor et al., 1985). These programs are "tailored" to the expectant mother to the extent that the language is specific to the "mother" and her "baby" (Windsor, personal communication, September 18, 1987). The skills included are those same skills as are included in programs for the general public: behaviour self-monitoring, relaxation skills and aversion therapy.

King and Eiser (1981) suggest that in cessation classes, smoking should not be treated in isolation, that anxieties should be addressed and that husbands and significant others in the social environment of the smoker should be included when planning the classes. No program or research project was found in the literature that addressed personal anxieties and environmental concerns for expectant mothers.

Baric, MacArthur and Sherwood (1976) postulate that the reason for lack of success in the abolition of cigarette smoking is because of errors in the approach used and in the target population chosen. He suggests that prevention methods (health education) should be targeted toward non-smokers and that cigarette smokers require behavioral treatment (skill development) rather than education. It is interesting to note that such skills as problem-solving, management of peer pressure and interpersonal communication skills are included in adolescent smoking prevention and cessation programs (Elder & Stern, 1986; Flay, Ryan, Best, Brown, Kersall, d'Avernas & Zanna, 1985; Schinke, Gilchrist, Schilling, Snow & Bobo, 1986).

Windsor et al. (1986), in a comprehensive review of past research on pregnant smokers, noted that few investigations have met the scientific criteria for rigorous, valid research. They noted few studies which show clear implications regarding the education of the pregnant smoker. Success rates following educational programs for expectant mothers are limited, perhaps due to these design and methodological problems.

SUMMARY

The review of the literature on smoking in pregnancy reveals why little is known with certainty. Consideration of men and women as a homogeneous group of smokers was frequent in the literature reviewed. While there have been suggestions by some investigators that men and women smoke for different reasons (Jacobson, 1981; James et al., 1965; Urberg & Robbins, 1981), no studies were found that were designed to explicate and measure different gender variables as they relate to smoking. The implicit assumption is that what is effective for men is effective for women. Variables that might be unique to pregnancy as it relates to smoking were not explicated and measured.

The lack of definitive findings may also be due, in part, to the assumptions of a priori methods in previous research on smoking. These studies take a deductive approach, beginning with a specific theoretical orientation and applying it to smoking behaviour in order to determine how well the facts fit the theory. In deductive research, the investigator selects response categories and imposes these categories on the subjects. Such deductive approaches run the risk that some aspects of the prenatal smoking phenomenon may be overlooked, since they fall outside the purview of the study. In particular, meaning, context and the perceptions of those pregnant women who smoke have been overlooked.

In this study an inductive approach was taken. It was designed as a factor-searching investigation (Diers, 1979), intended to inductively examine and describe prenatal smoking from the perspective of expectant mothers. The results of the study offer a beginning understanding of the multidimensional reasons for smoking during pregnancy and of the effects of health education on prenatal smoking.

CHAPTER III

THE METHOD

The research question determines the choice of research method (Bogdan & Biklen, 1982; Field & Morse, 1985; Morse, 1986; Leininger, 1985). Qualitative methods are indicated when there is either no knowledge or limited knowledge about a phenomenon or, when the researcher wishes to describe a phenomenon from an emic or subjective point of view (Field & Morse, 1985; Pelto & Pelto, 1978).

The purpose of this study was to examine prenatal smoking from the perspective of the expectant smoker. The gaps in knowledge about women who continue to smoke in pregnancy indicated a qualitative approach in which problems, hypotheses and variables regarding prenatal smoking were to be discovered rather than an approach in which predetermined problems were to be investigated (Burgess, 1986; Field & Morse, 1985; Glaser, 1978; Glaser & Strauss, 1967). The particular approach used in this study was an ethnographic approach. The processes of sampling, data collection and data analysis are described in the following section. Reliability, validity and ethical considerations are discussed as well.

SAMPLING

Because this study was concerned with meaning and can be described as a descriptive, factor searching study

(Diers, 1979; Mishler, 1979) the sampling procedure utilized was a non-probability one (Morse, 1986). The most appropriate non-probability sampling procedure was deemed to be theoretical or purposive sampling, in which informants were deliberately selected according to the theoretical needs and direction of the research (Morse, 1986; Pelto & Pelto, 1978). The thirteen prenatal smokers who were selected for this study met the following criteria: they showed willingness and motivation to participate and agreed that they could provide the time to take part (Hammersley & Atkinson, 1983), they were articulate and had good recall (Agar, 1980) and they lived within city limits.

Initially a total of thirteen informants participated in this study; however, one informant stopped smoking between the time of the initial approach and the first interview. Therefore, data from this interview were not included in the study. Four informants participated in a feasibility study prior to commencement of the main study and were interviewed once. Seven informants participated in the main study and they were interviewed twice. In order to verify the developing models, two secondary informants were utilized. A secondary informant is generally an individual within a similar situation or setting as the primary informants and who is used to validate the researcher's interpretation of the data or to enrich the researcher's understanding of the subject. The two secondary informants were interviewed once while the models were being developed. They were selected from a separate prenatal class within the same health unit. They were asked to critically examine the models and to comment on their appropriateness in relation to their own smoking experience. All informants were expecting their first child.

THE SETTING

This study took place in an urban centre in western Canada. All women who participated lived in the same section of that city and attended prenatal classes at a public health centre within the area. One informant was interviewed at her place of employment and the secondary informants were interviewed at the public health clinic. All other interviews were conducted in the informants' homes.

Informants were approached by the researcher as they arrived at the health clinic to attend prenatal classes. They were asked if they smoked. If they did and if they agreed to participate in the study, dates and location were agreed upon for the first interview. Prior to the first interview, a letter was sent to them to further explain the study (Appendix A). There were no refusals to participate.

DATA COLLECTION

The methods of data collection for this study were semi-structured interviews (Appendix B), non-participant observation (Appendix C) and a smoking diary, kept by the informants (Appendix D) (American Lung Association, 1980).

Interviews

Twenty interviews were conducted with feasibility study informants, main study informants and secondary informants. The first round of interviews was done using an open-ended interview guide (Appendix B). The interview guide was revised to increase the clarity of the questions following the feasibility study.

The first round of interviews resulted in the development of initial categories describing starting to smoke, experiences during cessation attempts, reasons to stop smoking, reasons to continue to smoke during pregnancy and the effect of health education on smoking behaviour. Two tentative models were initially developed depicting the influence of education on smoking in pregnancy and reasons for continuing to smoke during pregnancy. Decisions were made, based on the first round of interviews, regarding the nature and course of the following round.

The second round of interviews, done with seven informants in the main study, resulted in verification of analysis of the first round, clarification of any questions that arose following analysis of the first interviews and clarification of the categories and the models.

Between the second and third rounds, adaptations to the models were made. The third round of interviews was done with two primary and two secondary informants. These were verification interviews. Informants were presented with the models and asked to critically examine the findings. These interviews resulted in fine tuning of the models and final adjustments were made.

Non-participant Observation

Non-participant observation..."observing and talking to people as you learn from their view of reality"...(Agar, 1980) was done in order to observe, discuss and validate information retrieved during the interviews. Informants were observed for smoking behaviours in their homes during the interviews (Appendix C) and during intermission at prenatal classes.

Some informants did not smoke during the interviews nor at the classes; however, observation of those who did resulted in validation of their reported smoking behaviors. Information regarding the observed smoking behaviour and discussions was kept as field notes and were referred to continually during data analysis.

The Diaries

Each informant in the main study was asked to keep a diary describing her smoking for one week between interviews (Appendix D). The information from the diaries resulted in further validation of reported smoking behaviours and identified new information to be explored in second and third round interviews.

DATA ANALYSIS

A constant comparative method was used to analyze the data from this study. Analysis began following the first interview and continued throughout data collection and write-up. Data analysis proceeded in the following manner. Following the interviews, the researcher listened to the tapes and wrote field notes containing questions and ideas regarding emerging ideas, themes and patterns. Next, interviews were transcribed verbatim. The transcripts were copied in triplicate and then colour-coded with two colored pens, one colour to designate the informant and one to designate the interview.

The transcripts were read and marked with highlighter pens to label observed phenomena. Emerging ideas, themes and patterns were identified and written in the margins. Interviews were compared to each other for themes and patterns as well, and categories of phenomena began to emerge. Interviews were then cut and pasted manually and placed in file folders according to the emerging categories.

It was noted at this time that data from the main study were similar to that of the feasibility study and following consultation with the thesis supervisor, the decision was made to include these data in the analysis. These data served to saturate categories and "thicken" the data. Originally, eighteen categories were identified. The data from the interviews were continually compared to each other across categories, re-sorted and sub-sorted. During this process, memos were made containing possible connections and hypotheses, and a diary of investigator hunches, perception and ideas was kept. These were checked periodically during analysis to prevent loss of ideas. When the 18 original categories became unmanageable, it became apparent that they could be collapsed into six major categories. These categories were saturated by accumulating examples. As each category became saturated and no new information emerged, they were sub-sorted into smaller categories and the models began to emerge.

Next, cards with single words or phrases from the first round of interviews were made and utilized in the second round of interviews. The informants sorted reasons to start smoking, reasons to stop smoking, and reasons to continue to smoke during pregnancy. The informants sorted these cards into categories similar to the six categories previously identified by the investigator. This served to further saturate categories, to compare and contrast across categories and to verify the beginning analysis.

At the third round of interviews, the models were presented to one primary informant, then to two secondary informants and then to another primary informant. They were asked to critically examine the models and further adjustments were made between interviews. A third level of verification occurred as the investigator consulted with members of the thesis committee for direction and feedback.

RELIABILITY AND VALIDITY

Reliability and validity of data are important to establish in any research. Techniques used to establish them vary with the approach (LeCompte & Goetz, 1982; Pelto & Pelto, 1978).

Reliability refers to the concept of consistency or replicability of a study (LeCompte & Goetz, 1982). Qualitative studies, because of their contextual emphasis on natural, changing settings and subjective opinions, are rarely exactly replicable. However, LeCompte and Goetz (1982) state that "delineation of the physical, social and interpersonal contexts within which data are gathered enhances...replicability" (p. 39). Sandelowski (1986) adds that the ability of another researcher to follow the decision trail is an appropriate criterion for replicability. This study contains descriptions of the setting, the sample and the contexts within which data have been gathered and the decision trail is presented throughout the study. Relevant details and examples from the field notes and transcripts have been included. Data collection procedures and analysis procedures have been described.

Validity includes two components, internal and external validity. External validity refers to generalizability (LeCompte & Goetz, 1982; Morse, 1986) and is not a goal in qualitative studies. A study is considered to be generalizable to a larger population when it is context free. The research intent in qualitative studies is to consider the context in which a phenomenon occurs, that is, to specify the "conditions under which a relationship holds" (Mishler, 1979, p. 8).

Internal validity is considered to be the degree to which researchers are actually observing or measuring what they think they are observing or measuring (LeCompte & Goetz, 1982). The data collection and analysis techniques used in qualitative research are considered to be a source of internal validity because they derive findings from the informants. Triangulation between interview techniques, the informant diaries and on-going observation continually verified and expanded the data in this study. The use of ethnographic methods of data analysis ensured that developing ideas, concepts and theories were tested against emerging data. Sandelowski (1986) suggests that a more appropriate criterion for validity for qualitative studies is credibility. A study is credible when others "can recognize the experience when confronted with it after having only read about it in a study" (p. 36). Recognition of the experience was confirmed when secondary and primary informants were presented with the models. Further credibility will be assessed as the study is disseminated and critiqued.

ETHICAL CONSIDERATIONS

Ethical clearance was obtained from the health unit from which informants were accessed and from the University from which it was initiated. Written consent was obtained from each informant interviewed (Appendix E). The participants had the right to withdraw from the study or refuse to participate at any time during the study. Audiotapes and transcripts will be kept in a secure place for three years. If further analysis is to be undertaken, the researcher will consult with the research supervisor and ethical clearance, as appropriate, will be obtained. The report contains no identifying information about the informants nor the agency. Feedback was provided to the informants on completion of the study.

CHAPTER IV

RESULTS OF THE STUDY

The ten primary informants and two secondary informants who participated in this study discussed, explored and wrote about their thoughts, feelings and experiences regarding prenatal smoking. Analysis of these data is included in this chapter.

The women who participated in the study are described in the following section. This is followed by a description and an analysis of their smoking history: how and when they started to smoke, their attempts at smoking cessation and their relapse experiences. Influences on, and reasons for continued smoking during this pregnancy, including the influence and effects of prenatal education, concludes this chapter.

The text includes descriptions of the smoking diary data, observational data, and verbatim quotes that capture the informants' perceptions of prenatal smoking. Themes and patterns that emerged will be discussed as they relate to the informants' experiences. Additionally, differences between and among informants' ideas will be described.

THE INFORMANTS

Biographical data, on selected characteristics of the informants, are presented in Table II. Informants 1 through

TABLE II

Biographical Characteristics of the Informants

	Informants	Age	Education	Marital Status	Gestation
Feasibility	1	30	Gr. XII	M	20 wks
	2	26	Gr. XII	M	24 wks
	3	30	Gr. XII	M	24 wks
	*4	18	Gr. XII	S	25 wks
Main Study	5	24	Gr. XII	M	8-10 wks
	6	34	2 yrs post-secondary	M	12 wks
	7	29	Gr. XII	M	8-10 wks
	8	27	Gr. XII	M	13 wks
	9	24	Gr. VIII	M	10 wks
	10	31	Gr. XII	M	12 wks
	11	23	Gr. XII	M	8-10 wks
Secondary	12	29	Gr. XII	M	8-10 wks
	13	29	Gr. XII	M	12-14 wks

*Stopped smoking prior to first interview. Data not included in study.

4 are those who participated in the feasibility study. Informants 5 through 11 are those who participated in the main study. Informants 12 and 13 are the secondary informants.

One informant in the feasibility study (Informant #4) stopped smoking two days before the first interview. Data from this interview are not included in these findings. One woman in the main study stopped smoking between the first and second round of interviews. Data from this informant's first interview are included.

The informants ranged in age from eighteen years to thirty-four years with a mean age of twenty-four. Eleven informants had completed grade twelve. One had completed grade eight, one had completed two years of post-secondary education. Only one informant was single. Length of gestation was evenly distributed between the first and second trimester.

All informants were employed at the time of the first round of interviews, and were providing a second income for the family. One informant resigned her position between the first and second interviews due to complications of pregnancy. The informants lived in two or three bedroom bungalows in suburbia, and all were in the process of buying their homes.

While it is not possible to totally assess interpersonal relationships based upon two interview sessions, the following observations suggest that the participants and their husbands had developed several traditional relationship patterns. Household duties were within the informants' domain. As the researcher arrived for the interview, the participants were typically cleaning kitchens, preparing the next day's dinner and lunches or doing laundry. Typically, the husbands were watching television, out with friends, or at the gym. When husbands were present during the interview, they occasionally attempted to control the conversation. Some husbands attempted to answer the questions which had been posed to their wives. Others were asked by their wives to leave the room where the interview took place because they interrupted with their opinions about their wives' smoking behaviors.

During the second round of interviews the question was asked, "How are decisions made in this family?" Replies such as "mutual decision," and "by consensus," were fequent responses. However, when questioned further, decisions such as financial decisions, future discipline decisions, and decisions regarding the future family size were frequently deferred to the husband.

Data analyzed from the interviews (Appendix B), the diaries (Appendix D) and the observational tally sheets (Appendix C) further described the informants in terms of their current smoking status. Information from the diaries confirmed the interview reports regarding the number of cigarettes smoked, circumstances under which informants smoked and reasons for continued smoking.

The number of cigarettes smoked per day ranged from ten to forty cigarettes daily. Most informants had begun to impose limits on the amount they smoked. Some restricted their smoking to designated times, one informant smoked only at her place of employment, some stopped smoking in their vehicles, one smoked only in her back yard. One informant was attending formal cessation classes provided by her place of employment and was monitoring and reducing her cigarette consumption considerably before this study began. Two informants had no intention of stopping smoking during the period when they were being interviewed.

Non-participant observation revealed that only five of the informants smoked during the interviews and that only three consistently smoked at intermission during the prenatal classes. Two of the informants who smoked during the interviews were those whose diaries showed that they smoked twenty-five to forty cigarettes daily. These women were self described "heavy smokers". They did not appear to notice their smoking during the interviews as no remarks were made about it, nor did they comment on the researcher making notations while they smoked. They appeared to be smoking automatically and this validated their interview remarks and diary notations..."it's just automatic, just because it's there."

Three informants who smoked during the interview did remark, with each cigarette, on the need to smoke due to stress. This was consistent with diary notes addressing smoking for stress. These informants implied that the interview process, trying to answer questions and find the "right words" was stressful for them. Another remarked that because an hour had passed, it "just seemed to be time for a cigarette."

In the previous section the current smoking status of the informants who participated in this study was described. In the following section the smoking history of these informants as a potential influential factor on current smoking status is presented.

Throughout the description of the analyzed data, the source of data will be identified by two numbers, for example, 1.4. This identifies the data source as the first interview of the fourth informant; 2.5 will identify data from the second round of interviews and will identify the speaker as the fifth informant interviewed.

SMOKING HISTORY

The experience of becoming a smoker, of attempting smoking cessation and beginning to smoke again was considered important data in order to determine possible historical influences on current smoking behaviour during pregnancy. Data analysis revealed patterns and themes that do suggest a historical influence on continued prenatal smoking. These data will be discussed in the following section.

Starting to Smoke

The women in this study had a first smoking experience between the ages of 11 years and 18 years. The experience was clearly remembered by all informants; all of them experienced unpleasant physical symptoms with their first attempt. Some felt nauseated, some vomited and some fainted.

Four informants smoked with their families and in public at the age of 13 years. The remainder smoked openly at ages 14 through 18 years. Some smoked in secret; "in the bathroom," "at school" and "out the bedroom window" before smoking openly.

As the informants recalled their early smoking decisions and experiences, four recurrent themes were evident as influencing their initial and continuing smoking decisions. The themes that emerged were social factors, personal factors, habitual factors and addictive factors.

The decision to smoke or not to smoke was recalled as being strongly influenced by the smoking behaviors and attitudes of important friends and family within the social world of these informants. These influences were perceived as the most potent of influences and were labelled during the card sorts as "social factors." The internal feelings that these women recalled having about themselves and about what was happening in their lives at that time emerged as a second influence, personal factors. Additionally, informants spoke of habitual and addictive factors but with less frequency and less clarity than they spoke of personal and social influences on their smoking at this time. The four themes are described in the following section.

Social Factors

The Family Influences. All informants perceived family influences, particularly parental influence, as very important as they recalled early smoking experiences. Those informants whose parents smoked and who gave permission for their adolescent daughter to smoke were perceived as no less influential than those who did not smoke, and who refused permission.

Ten of the twelve informants had parents and brothers and sisters who smoked. Smoking at home was described as "the norm", "a family thing to do". Some informants suggested that smoking with the family implied a feeling of inclusion.

> 1.6: I think my parents had a lot of influence there because they both smoked. My mom and my sister smoked together. My mom's a very heavy smoker and I felt like "odd ball out."

Others placed blame on their family for the fact that they smoked today.

> 1.8: We were all allowed to smoke when we were around fourteen...so I think it's their fault, that they let us smoke.

The parents who were clearly against smoking, and who did not smoke, were also perceived as influential on beginning to smoke. In these families there were strict rules about not smoking and these women, as teenage girls, broke the rules.

1.5: If they hadn't made such a big deal about it, I probably wouldn't have. It was "you will not smoke in this house till you're 18."

1.9: ...at sixteen, I moved out. Their restrictions couldn't control me anymore.

The largest proportion of parents were smokers; however, all parents were recalled as having preferred that their daughters not smoke. Smoking on the street and hearing about their children's smoking behaviour from neighbors were particularly unpleasant experiences for parents. These negative parental attitudes about adolescent smoking, especially in public, assisted these young women to gain permission to smoke at home. It seems that they controlled and manipulated their parents into giving permission. This process is captured in the following remarks.

1.7: ...well, what would you like us to do Mom, stand outside and smoke on the streets, or take dope or whatever? Well, it caught Mom, right there. I've smoked ever since.

1.3: ...so my Dad just gave up. He said, "if you really want to smoke, you do it in the house, in front of me, not out on the streets." If your parents smoke, how can they forbid you to? I mean that's like a double standard.

Influences External to the Family. The need to be a part of a group at the adolescent stage in life was addressed by all informants; "I mean you would probably die if you weren't accepted into the crowd." All informants recalled thinking that smoking would help them gain acceptance, because it was a ... "cool thing to do" and because ..."everyone was doing it," it "helps you fit into a crowd." The need to be accepted by the crowd was described by these informants as "peer pressure."

Peer pressure was perceived in two ways. Some informants recalled remarks by their friends whose message was explicit: "if you don't smoke, you will not be part of this group."

1.7: They were all smokers and I didn't smoke so they would tease me about it. So I'd light up and I'd just blow the smoke out again...they'd say "aren't you a mama's girl?" and "sucky" and things like that. And so it got to the point that you finally just lit up to get them off your back.

Others also recalled peer pressure as an important influence on their smoking; however, they did not recall any explicit remarks by friends to that effect. Rather, they described their own feelings of internal pressure, pressure they put upon themselves.

1.1: For me it may have been "mental" peer pressure. Maybe four out of ten in my group smoked. But they were the people that I, I don't know, maybe that I wanted to get closer to, but you know, there was peer pressure in the sense that I wanted to be like them.

Several women were able to recall the special influence of a particular person on smoking; a girlfriend, an older sister, a best friend. Older siblings often encouraged smoking so they would have a common secret and parents couldn't find out; ..."so I couldn't squeal if I smoked too." Older sisters were also often admired, as were special friends.

1.11: There was no real pressure on me to smoke. It was like, she told me she smoked and I thought oh wow, she smokes, you know?

R: You looked up to her?

1.11: Yeah, she was a little older than me.

The influence of family and friends, labelled by the informants as social factors, was recalled as the most potent influence on starting to smoke. However, many informants also recalled "not feeling good about myself" as well, and these feelings will be discussed in the next section as personal factors. Personal factors and social factors were always described as closely related, and were difficult to compare and contrast.

Personal Factors

Life at the time of starting to smoke was remembered as upsetting and as in a state of upheaval for eleven of the twelve informants. A typical remark regarding that time was: "My life was running amuk." Typical recalled descriptions of the informants' lives included frequent changes in residence and the ongoing difficulties in making new friends, living with an alcoholic parent, parental divorce and frequent fighting within the family. These women recalled "feeling shy," "not strong enough, no confidence," as a result of an unhappy family life at the time. They also recalled being "too tall," having "bad skin," not having the "right clothes...the normal worries that all kids have" as partial sources of their uncomfortable feelings about themselves. Only one informant described that time as "basically just going to school, going to dances, doing things like that...no problems."

Several informants recalled perceiving only one potential solution to their personal and social discomfort: to make a change. Some informants clearly recalled making a decision to "change my image." The image change had two purposes. The change was perceived as providing access to the group to which the informants wished to belong and it was perceived as having the potential to help them feel better about themselves. The following informant captures the relationship between social and personal factors that influenced her smoking at that time. As a teenager, she did not feel good about herself, a personal factor. Her method of attempting to feel better was to try to change her image and become a smoker. This was in accordance with the social standards of her peers.

1.4: I grew up in a logging camp...one-room school and all of a sudden we moved to the big city and it's like everything is totally new. So the first year in the new school I was a square because my clothes were outdated. And I was pretty good in school...so I was just looked on as a square and I hated that. So the following summer I decided to change. I was going to change who I was. Cigarettes can do that for you, you know.

Related to "changing my image," and "being accepted" was a need to "do it right." Practice was required in order to "do it right."

> 1.1: I didn't realize you were suppose to inhale, and I didn't actually start until I was in Senior High. I was smoking in the girls' washroom and this girl came up and said, "you're not smoking right". Heaven forbid, I was smoking wrong. How obscene! How embarrassing! And so she showed me, and since that time, like a dummy, I did it.

These informants described social factors as the most salient influences to smoke. Personal factors as influences were powerful as well but were described as less potent. There was initial confusion regarding recalled habitual and addictive smoking at that time; however, analysis of the interviews depicted some influence by these factors.

Habitual and Addictive Factors

The articles cited in the literature review compared smoking as a habit (Glover et al., 1982; Hunt, 1970) to smoking as an addiction (Glover et al., 1982; Henningfield, 1984; Russel et al., 1983). The typical habit is described as an overlearned, fixed behaviour pattern to the point of being automatic. The typical addictive cigarette has three essential components: tolerance, dependence and withdrawal.

As these informants recalled their early smoking experiences, it became clear that they did not perceive their smoking as either a habit or an addiction. Smoking as "part of my life" and routine was recalled within the first few months of smoking acquisition by three informants;

however, a typical remark regarding early smoking behaviour was, "I didn't need it then." When and how habitual and addictive factors emerged as important reasons to smoke was unclear to these informants; however, the influence of these factors became clarified as the informants described attempts at smoking cessation. These factors are described in the following section.

In summary, analysis of the historical smoking data revealed smoking for these young women as a purposeful endeavour which was most frequently related to social factors. Smoking offered these young women a perceived sense of control over their lives: they smoked and perceived some control over their parents' attitudes and behaviors; they smoked and perceived some control over their social group, over their image, and over their negative feelings about themselves.

Smoking Cessation

Every woman in this study had made at least one "serious" attempt at smoking cessation. Each had been successful for periods of from one day to nine months. The ten women who wished to stop smoking during this pregnancy were making attempts to decrease the amount they smoked. Some had stopped smoking in the home, others had restricted their smoking in their cars or in their place of employment.

Several women expressed the hope that pregnancy symptoms, nausea and vomiting, would be enough motivation to stop; "I hoped I'd get sick and couldn't look at a cigarette." Nausea in early pregnancy had restricted smoking for two informants; however, they had since returned to their previous smoking pattern.

As the expectant mothers discussed their previous experiences with cessation, reasons for wanting to stop and for not wanting to stop smoking, four categories of influential factors emerged: personal factors, social factors, habitual factors and addictive factors.

Personal Factors

Personal factors were those issues depicted by the informants as private issues, relating to their bodies and their feelings. Analysis of the personal data revealed two sub-categories: health factors and hygienic factors.

Health. With the exception of one informant, all informants had "felt better" during previous cessation attempts and expected that "feeling better" would be a positive outcome if they stopped smoking at this time. Feeling better was measured by these women in both a "physiological" and "psychological" sense. Physiologically, they described "easier breathing," "increased energy," "sleeping better," "improved taste and smell." Related to improved taste and smell, improved appetite was also frequently mentioned; however, not always in a positive sense due to consistent concerns about weight-gain.

Concern for the health of the baby was also categorized by these informants as a personal health factor.

2.1: It's a personal feeling you have because you're going to have a baby, you want it to have a good, healthy start, so you're feeling you just want to quit.

1.9: Because the baby is me right now, so it's my health.

Psychologically, most women "felt good" and proud of themselves when they were successful at smoking cessation.

1.7: I felt good you know. I was really proud of myself. I could control it.

Another informant felt proud because she "proved that she could do it."

Conversely, one informant felt no better during a cessation attempt; "I got fat, and I got bad-tempered when I quit." This particular informant made it clear that she had no intention of stopping smoking at the time she was interviewed.

Hygiene. Generally, feeling cleaner was an important reason to stop smoking: "clean hair," "clean complexion," "the absence of nicotine stains on my fingers" and "cleaner teeth" were frequently mentioned.

All informants had noticed the return of their sense of taste and smell during cessation attempts. As a result, they also noticed the smell of cigarette smoke on others.

2.1: I could smell it on them. I did notice that. I thought, gee, I must smell the same way as they do. That wasn't a good feeling.

Preparing for a clean environment for the baby was mentioned as well as a personal influence on attempting to stop smoking.

1.1: When I don't smoke at home, the walls, windows and curtains are cleaner. It'll be better for the baby.

It was agreed by all informants that in order to stop smoking, the smoker must choose to stop because they themselves wanted to do so and that this personal choice was the only valid reason to stop.

1.10: I just don't think there's any point in trying to quit unless you, yourself, really want to.

As these women discussed previous "failed" attempts at cessation, they described those attempts as being "for" or "because of" someone else, most frequently their husbands. Previous "failed" attempts were thought to be unsuccessful because the attempts were made for the wrong reasons; they were made for someone else.

Social Factors

Although the women interviewed in this study strongly believed personal reasons were the only valid reasons to stop smoking, they also recognized and discussed the presence of "outside" influences. These influences were labelled social factors. It seems that social factors are especially influential during pregnancy. The informants described these social factors as "pressure." Pressure to stop smoking was perceived to have come from two separate but related sources: from society at large and from family members.

Societal "Pressures". While all informants described themselves as "respectful" and "cautious" toward the rights of non-smokers, the lobby against smoking, through media sources and no-smoking by-laws was depicted as a source of some discomfort. Reaction to the lobby, the media messages and by-laws ranged from "it doesn't affect me", to anger: "you can't just take away my rights" and "I feel like a social out-cast." Several informants felt the media pressure and general political attitude against smoking were especially difficult to bear during pregnancy. The following informant perceived unspoken censure at prenatal classes:

> 2.10: ...they looked at me and they're going well, you're pregnant, and you're smoking, blah, blah, blah, you know. But they didn't say that, but you know what they're thinking, right? I felt dumb then. I felt out of place -- it's just their glance -- look at the pregnant lady, going out there for a smoke, you know?

Family "Pressures". The informants also perceived "outside pressure" to stop smoking in pregnancy from non-smoking family and friends. Again, this "pressure" was perceived as more noticeable during pregnancy. Remarks by others regarding their smoking behaviour were perceived by these women as neither supportive nor helpful in reducing the number of cigarettes smoked. Rather, the remarks were perceived as added "stress." Several informants suggested that this added stress was motivation for continued and increased smoking. The following informant's husband "pressured" her to stop smoking.

1.3: ...because we would have constant fights about it. So, that would make me smoke more.

The patterns of smoking changed somewhat in response to outside "pressures" for these informants; when, where and with whom they smoke has changed. However, social factors as influences to stop or reduce smoking had not reduced the amount smoked.

1.5: My brother lives here, and his wife. We were not allowed to smoke in their house. As a result, we don't go there, and they don't come here.

Two informants admitted to smoking in secret, away from the "pressure" of family.

1.2: I'll just take the dogs for a walk. And have a couple of drags in the alley. He doesn't have to know.

Social or "outside" influences were ineffective and changed only the pattern of smoking. For the women who participated in this study, it was necessary that personal reasons to stop smoking assumed dominance.

1.7: If you're going to quit, you have to quit for yourself, you can't quit for anyone else...quitting for my husband was a mistake.

Habitual and Addictive Factors

Habitual and addictive factors again emerged from the data regarding smoking cessation. There was some disagreement regarding the impact of habitual and addictive smoking in the descriptions of cessation attempts. Some informants felt the impact of habit and addiction on cessation attempts was minimal while others perceived the impact as very powerful and "over-riding" all personal and social reasons for smoking cessation. For some, it seemed that if the personal factors were strong enough, habitual and addictive smoking could be overcome and smoking cessation attempts would be successful.

1.12: Habits can be broken. People kick addictions. You just have to want to, bad enough. For your own reasons. It's a hard thing.

Consistent with the data regarding the process of smoking cessation, the theme of cigarette smoking as a mechanism for personal control again emerged. The informants resisted attempts by significant others and society to control their smoking behaviour. All informants were clear in stating that the only valid reasons for smoking cessation were personal reasons. The need for control was exemplified by the remarks of three informants who described the circumstances under which they could envision themselves as non-smokers.

R: How would things have to be for you if you were to quit?

1.1: A bubble. A shell. It would just sort of take me away from everything and anything. If I could live like that, I swear it would be easy to quit.

1.3: Bottom line? Be perfectly content with my life. Not feeling uptight about anything. And I'd have to have everything running smoothly and be contented.

1.11: It's easier if you could just shut yourself off and not have anybody around and just, you know...?

These informants have envisioned situations over which they felt personal control.

Starting to Smoke Again

All informants in the study had attempted cessation and all had relapsed to their previous smoking behaviors. Ambivalent feelings were apparent as they discussed starting to smoke again. Some women were "proud of themselves", that they had stopped smoking for a time, yet they were also "disappointed" that they had started to again. Some felt a sense of "relief" to be smoking again but "discouraged" and "angry" because they were. Analysis of the data again revealed four emergent themes; personal, social, habitual and addictive factors as influential factors in the process of relapse. These factors did not emerge as distinctly in this section as in previous sections of this chapter and thus are combined, as the informants described them, in the following section.

Habitual Factors

Although most informants expressed some disappointment at having started smoking again, and although the experience of having attempted cessation was described as difficult, most women perceived that "with just a bit more effort," cessation could be accomplished. "Just a bit more effort" was perceived to be most effective to stop smoking the cigarettes described as routine or habitual; the cigarette "after a meal," when "putting on my make-up," and when "having a cup of coffee." One informant described herself as ..."not hooked, I just didn't try hard enough." The informants who perceived their smoking as habitual felt positive about future attempts at quitting; it seems they knew exactly what to do next time, they simply had to try harder.

> 1.10: It doesn't bother me that much. It doesn't seem that bad to me. It was nice at first. A relief, I guess, you know, to be smoking, but after awhile I thought, oh, I could have pulled it off - a little bit longer and I could have done it.

While these informants were hopeful that they could control their smoking, if they "tried harder," some informants discussed a sense of feeling out of control of their smoking. During the card sorts, as the informants categorized their "reasons for starting again", a category emerged that seemed to combine addictive, personal and social influences on starting to smoke again. This category was labelled by the informants as a "cigarette could fix everything" and is described in the following section.

Addictive Factors, Social Factors and Personal Factors

The women who participated in this study addressed three situations in which smoking was perceived as necessary as a coping and/or management tool in which "cigarettes can fix everything." Smoking was perceived to be helpful in management of everyday stresses; "being under a lot of pressure." Smoking was perceived to be helpful in the management of weight gain and smoking was perceived as helpful in the management of feelings. Coping, with the help of a cigarette is summarized by the following informant.

> 1.7: Everything just happened to be going wrong for me, then, all of a sudden. I started thinking, geez, I wish I still smoked. Maybe that would help me unwind from this. And then, eventually, I did. I was stupid, I know, but it helped.

When things were going well, and life was perceived as in control and stable, smoking was much less an issue. However, when their lives were in crisis, smoking was seen as a way to manage the crisis.

> 1.7: When I had been off cigarettes and everything was going smoothly, people could even smoke in my office and it wouldn't bother me.

> 1.1: For me, my life wasn't straightened out, I was just handling it a lot better.

The following informant described an extreme example of the necessity of a cigarette to regain control of her life.

> 1.1: I tried to handle it myself for a month. But things got really bad. And I lost control of my personality at times. Crying one minute, laughing the next. I was mostly on an emotional roller-coaster, which I just couldn't handle. It's like your mind is going, Bang! Bang! Bang! So it didn't work. I got on the scale and I was five pounds heavier and I thought, oh my God, here we go. I'll gain a pound a week. Like, I just...enough is enough. I smoked.

The need to smoke again was based on the informants' perception that smoking helped them to regain and/or maintain a sense of control of their lives. It was clear to all informants that smoking changed nothing; however, smoking was perceived as helping them feel more stable, more in control, more able to manage their personal and social lives.

INFLUENCES ON CONTINUED PRENATAL SMOKING

The purpose of this study was to gain an understanding of continued smoking during pregnancy. The following informants capture the difficulty that the expectant mothers had in trying to explain their reasons for continued prenatal smoking.

R: Can you tell me what purpose smoking holds for you today?

1.6: It has no purpose. It's a stupid thing to do.

1.11: It meets all my needs, depending on my mood. It's a miracle drug.

1.5: I enjoy it.

1.4: It relaxes me, and relieves my tension, my nervousness.

There was no single reason for continued smoking described. What emerged were complexities, ambiguities and occasional contradictions.

Analysis of the interview transcripts, the diaries, the observational tally sheets and the card sorts did, however, reveal four major themes that were derived from the data as influences on continued prenatal smoking. Again the four major themes have been labelled as personal factors, social factors, habitual factors and addictive factors. From the initial categories, card sorts and verification interviews, a model of reasons for continued smoking was developed and is presented in Figure I.

The four factors were not perceived as separate or distinct as they influenced continued prenatal smoking. Rather, they interacted, blended and were inextricably interwoven. The weight and salience of each influence shifted, given different social situations, different moods and different needs.

Personal factors emerged as those private and internal dimensions within the informants, most often related to thoughts and feelings about themselves, but which, on occasion, may have been in response to stimuli external to themselves. Social factors were related to and are similar to personal factors; however, they were considered distinct in that they always related to being with and communicating with others. Habitual factors were identified by the informants as those marked by repetition and custom: "just because they're there." Addictive factors are similar to habitual factors but distinct because of the sense of described need and the compulsion, dependence and tolerance to cigarette smoking. The following section describes the model for continued prenatal smoking.

Personal Factors

Four sub-categories of personal factors emerged as reasons for continued prenatal smoking: external reasons,

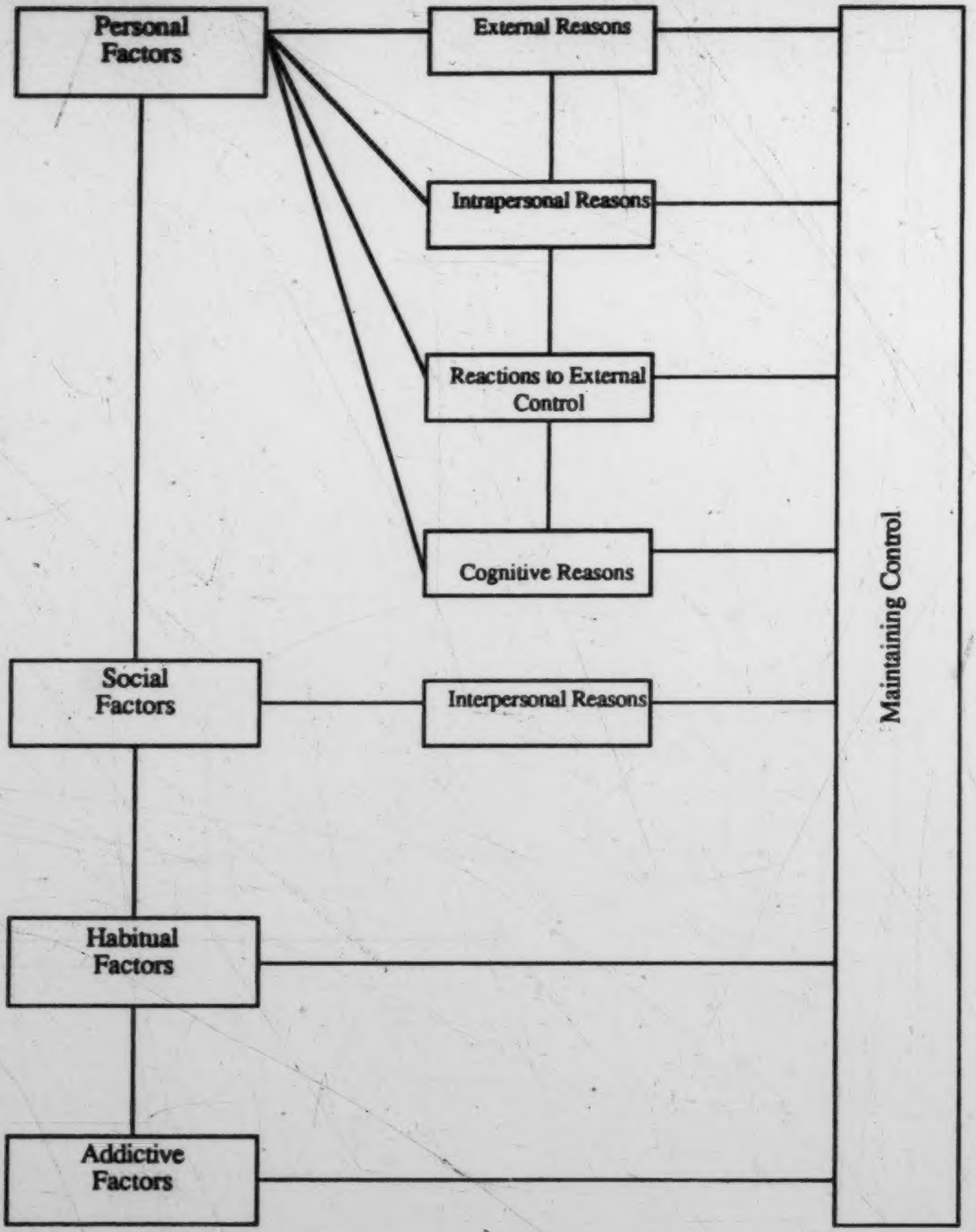
Personal Factors
External Reasons
Intrapersonal Reasons
Reactions to External Control
Cognitive Reasons
Social Factors
Interpersonal Reasons
Habitual Factors
Addictive Factors
Maintaining Control

Figure 1. Reasons for Continued Smoking During Pregnancy.

intrapersonal reasons, reaction to external control and cognitive reasons. External reasons are those reasons described by the informants as "pressure on the job." Intrapersonal reasons are feelings the informants described as having about themselves. The third category described as a reason to smoke was a reaction to external control; that is, when others attempted to control the informants' smoking behaviour, and the fourth category to emerge was smoking for cognitive reasons: smoking was perceived to help the informants think. These sub-categories will be described in the following section.

External and Intrapersonal Reasons

External reasons to smoke are those reasons most often described as employment related, "pressure on the job." All informants were employed at the first round of interviews and all informants addressed "stress at work" as a reason for smoking.

Intrapersonal tensions were described as "feelings that reside within." They were perceived as distinct from work-related reasons for smoking and were described as the more private and personal feelings the informants had about themselves.

While external and intrapersonal factors as reasons for smoking differ, the desired effect or required outcome as a result of smoking are, with two exceptions, identical. The two exceptions are smoking for weight control and smoking to have something to do with the hands. These dimensions will be addressed at the conclusion of this section.

Themes relating to time were interwoven throughout the interviews, not as a distinct category or as related to any one dimension. One of the major components related to time appeared to be the concept of taking a "time-out." A "time-out" required stopping in the midst of a stressful activity or an upsetting thought and taking a moment to have a cigarette, following which the informants "felt better." It seems that neither time taken in isolation, nor the cigarette smoked in isolation, could provide the desired outcome. A time-out and a cigarette, only if taken together, were helpful.

1.3: No, I can't just, you know, stand there and have a cigarette. Well, I could, but it doesn't help. You have to take the time to have a smoke.

Taking time was often described as required by the informants as they reacted to feelings, most often negative feelings. These negative emotions were described as components of both intrapersonal and external reasons for smoking.

The informants had considerable difficulty in describing their emotional reasons for smoking. This was due in part to unfamiliarity with the process of naming feelings, perhaps because they were unfamiliar with being analytical and explicit regarding feelings and how they relate to smoking needs. The informants had difficulty in comparing and contrasting feelings and in describing them as distinct from each other. However, some distinctions emerged and will be addressed in the following section.

Smoking to Calm Down. The most frequently mentioned intrapersonal and job-related reason to continue to smoke was for the purpose of "calming down." Anecdotal remarks within the diaries frequently mentioned "stress" as a reason to smoke. Typical remarks about the stress were "when managing customer complaint calls," "feeling inexperienced," and "feeling nervous - going for ultrasound." A cigarette was deemed necessary by the women in this study when they were "upset," "uptight," "anxious" or "nervous" as a result of the stress. All informants agreed that emotions were more extreme and more difficult to manage in pregnancy, "twice as bad." They described themselves as "more sensitive" and "more hyper" in pregnancy. Some described tensions and concerns regarding having a new baby, others described the pressure at work, some the "stress of a high-risk pregnancy," and all described the need for a cigarette to help "calm me down." Because of the calming effect, many informants found that their smoking had increased during pregnancy. The cigarette that was perceived as "calming" was referred to by several informants as "a crutch."

R: What do you mean, a crutch?

1.12: A crutch, you know, like you lean on it. If you're hurt or if you're crippled. It feels like that sometimes when I'm so uptight.

The following two informants describe extreme examples of a calming cigarette.

> 2.9: I've already bled twice, I've had severe cramps, I double over in pain, it's very, very terrible. The doctors say "we've made it this far." And then you hear in prenatal classes that you start feeling movement the eighteenth week, and here I am in my seventeenth week and I'm not feeling anything yet, you know?...What's the problem here you know? Like so there's a lot of things I'm worried about. But the doctor says everything is fine. But then you have a cigarette and it calms you down.

> 1.1: ...and I started bleeding and it persisted through the holiday, and getting worse and worse...so that sort of put me on edge and I kept telling myself, you have to quit smoking and I'd go to the bathroom, and oh my God, and out to the kitchen again and have another cigarette and try to calm myself down.

Smoking for Relaxation. It was difficult for these women to differentiate between a relaxing and a calming cigarette; however, analysis of the transcripts and the remarks in the diaries revealed a subtle difference. This difference was verified by the secondary informants. The difference that emerged shows that one need not be upset in order to require a relaxing cigarette. When the informants had a cigarette to relax, they were more likely to feel "on top of a situation."

> 2.10: A cigarette for relaxing is like a luxury. I don't really need it. Yeah, like a luxury.

Typical diary remarks were "...relaxing, finally got my work done" or ..."I'm smoking to relax with a bit of television." One informant had a clear distinction in her mind. The cigarette to calm was "psychological, in the mind," the cigarette to relax was "physical, in the body."

Smoking for Relief. A cigarette that was perceived as relief was one that follows a waiting period in order to have an opportunity to smoke.

1.10: It's like, when you've been real thirsty, and you finally get a drink of water, it's like ooooh!

Several women used the term "craving" as if it were related to the relief. Craving a cigarette is included in the description of addictive smoking.

A second category of smoking for relief emerged. A cigarette can be used to relieve anger. Several informants described being angry, yet being in a situation or being the type of person who couldn't or wouldn't address the anger, other than by smoking. In this situation smoking was perceived as relief.

1.3: He makes me so mad. I go for a walk. I have a cigarette. I feel it eases me.

The activity of butting the cigarette out, either by stepping on it, or by "grinding it into the ashtray" was perceived as providing relief from the anger as well.

Smoking for Distraction. The cigarette used to distract was most often mentioned by women who had concerns about their pregnancy and about their own personal health. The following informants describe the need to distract themselves from their concerns.

1.9: I'm worried about my pregnancy, and have a cigarette to get it off my mind. It's all those feelings.

1.1: Smoking is like a time-out for me, because of all my health problems and stuff. It gets me away from it.

Smoking for Comfort. Smoking for comfort was mentioned and verified by several informants. Often a cigarette was required for comfort following a reprimand by a boss, a co-worker or a family member, often because the informants perceived anger directed toward them. The informants described feeling no anger in return, no sense of needing to retaliate, just that they felt "badly." It was as if they needed a shelter, and as if a cigarette could provide it.

2.11: You just feel so bad. Like you need a place to hide. Somehow a cigarette helps, I don't know...

Smoking for Reality Orientation. Cigarettes were used by these women on occasion to "get them back in the real world." These cigarettes were sometimes described in relation to the "comforting cigarette;" the cigarette was required for comfort for a time; however, it was also helpful to remind them that "there's more to life than this job;" ..."that life goes on, even if you do feel awful."

The reality orienting cigarette was also mentioned in relation to "scary" and "sad" movies.

1.6: ...you know it's all suspenseful, and you get a smoke, and you're like...it's all of a sudden reality...

Smoking for Escape. Leaving the scene of perceived personal stress was described as one way to relieve it. Going for a cigarette was reason enough to leave. The cigarette used "to escape" was most often discussed in relation to work pressure; however, one informant used this escape route following an argument with her husband, most often over her smoking. Escape was required when things were "really bad," with "deadlines," "telephones," "turmoil" and "things are out of control." Leaving the scene of the tension would not relieve that tension as completely as leaving and having a cigarette.

1.5: You just have to stop, push away from your desk and get out of there for ten minutes.

R: What if you didn't have a smoke?

1.5: It would help to leave, but not as much.

Smoking for Reward. There was initial disagreement about the cigarette that was used for reward; some women agreed that they used a cigarette to reward themselves, some denied doing so; however, that it might be used as reward was verified in the diaries..."I like to smoke when I get my work done" as well as by the secondary informants. When smoking was perceived as rewarding, it was often following a sense of accomplishment and often related to becoming fatigued, of having worked hard, feeling tired and rewarding oneself with a cigarette. One informant likened the reward of a cigarette to the feeling following a jog.

1.13: ...I felt like I got energized. I was all right. I did good. I worked for something, I achieved it...the feeling is not exactly the same. But it's something about reaching a goal.

Smoking for Weight Control. Weight control was perceived by the majority of the informants as an important personal reason to continue to smoke. Being "overweight," "fat" and "a blimp" was a very real concern to the degree that some informants described themselves as "paranoid" about weight gain during pregnancy.

> 1.10: I don't want to be a blimp. It [smoking] cuts down my appetite. I'd sooner light up than go make a sandwich.

For these informants, weight control had been a source of concern prior to pregnancy and they were additionally concerned that any weight gained during pregnancy would be difficult to lose following the birth of the child. Smoking was perceived as the mechanism that would prevent weight gain. All informants had experienced hunger and some weight gain during previous cessation attempts, and had experienced weight loss when they started smoking again.

> 1.6: I also got this thing in my head, if I do quit I'm going to gain a lot of weight, and every time I think of that, well I don't want to gain weight, so that's probably why I don't quit.

Only one informant was not concerned about weight control, and denied that her smoking was related to weight control in any way. However, being pregnant did make a difference to her eating habits; she felt a freedom to eat as she wished because ..."my figure is shot anyway...I guess maybe being pregnant I don't feel so guilty, eating as much as I do."

Smoking to Have Something to Do With My Hands. Having something to do with the hands emerged as a personal reason to continue to smoke. This theme emerged frequently; and was on several occasions mentioned in concert with weight control issues.

> 1.10: I think smoking keeps my hands busy. I remember one time I ran out. I couldn't get a cigarette so I had to put something in my mouth. I got a cinnamon bun, it was a day old; "crappy," and I had two cups of coffee...hands and mouth.

Having one's hands occupied also prevents "nervous" hand activity.

> 1.1: The cigarette will give me something to do with my fingers so I'm not...I don't know what causes me to bite my nails, sometimes I get them right down - well, cigarette smoking stops me from nail-biting.

Smoking was perceived by these informants as a personal, purposeful endeavour. Cigarettes were used as a mechanism for maintaining emotional control. They were perceived as helpful to control internal tensions (intrapersonal reasons) and to control the emotions elicited in response to pressures at their place of employment. Related to and interwoven throughout these purposes was the concept of taking time for themselves. Cigarettes, as a mechanism for weight control, and control of their hands, were also perceived as important personal purposes for smoking.

Reaction to External Control

Most informants in this study described a typical smoking pattern in response to remarks from non-smoking husbands, their mothers, friends and society in general. The remarks were considered to be attempts to control their smoking and were labelled "external control." Analysis of the interviews revealed a smoking pattern depicting a struggle for personal choice and personal power.

Smoking for Autonomy. Feelings of being judged, criticized and controlled because of their smoking behaviour were frequently described by these informants.

> 1.12: Most people never used to say anything about my smoking--nothing. Now every time I have a cigarette he hits the roof. He feels he has the right now to domineer my life when it comes to cigarettes. I know the risks, I think everybody knows the risks. I feel the pressure, it pisses me off a little - excuse my language!

Responses to the criticism varied. Feeling "guilty" was mentioned by two informants. Feeling angry was consistent among all informants.

> 1.12: I get angry. I retaliate and I say I'm not putting it out either.

Frequently, the informants described feeling "rebellious" and "resistant" to the perceived criticism, and as a result, some informants described smoking "out of spite."

> 1.3: The more he harasses me, the worse he makes it for me 'cause I get nervous and I get uptight and my way of releasing it is by having a cigarette.

One informant remarked in her diary, "My mother makes me feel so guilty and mad, so I smoke at my sister's so I don't have to sneak around." To smoke out of "defiance" and rebellion was viewed as "silly" by two informants. They agreed that they did smoke following criticism and attempts by others to control their smoking but they smoked not out of rebellion and resistance but because "it's my choice."

All informants who perceived judgments, criticisms and attempts to control their smoking by others agreed that they felt no sense of support for reducing or stopping smoking.

In fact, their remarks depict a sense of helplessness in response to the "external control."

1.2: ...like you're so frustrated. Like what's the use?

R: So what happens?

1.2: Well if I'm going to get shit when I'm trying to quit smoking, what's the use? I might as well smoke and get shit anyway.

Perhaps the frustration consistent in the interviews following attempts at external control are best summarized by the following informant.

1.1: I feel like it's my habit, not his. And it's my choice to quit. I'm not going to have someone else tell me when I can quit or how I should quit. It's like at times he's trying to control that particular part of me. He can't. It's my choice. I have to make the choice when I'm going to quit. He just makes it harder for me; to have someone constantly harassing me.

Smoking for Camaraderie. A second smoking pattern in response to "external control," and related to smoking for autonomy, emerged as smoking for camaraderie. This cigarette facilitated a bonding of pregnant smokers in response to "no smoking" rules and regulations, and in response to attitudes and remarks by non-smokers.

During the participant observation portion of the study, smoking for camaraderie was apparent. The researcher and the informants attended prenatal classes together. When a "break" was called, those who wished to smoke were required to leave the building and smoke outdoors. Those couples and individuals who left the building to smoke outside became friends. As the classes continued, the smoking couples began to sit together and visit before class began. They exchanged phone numbers. One informant's husband found another's husband employment. They exchanged "due dates" and made joking tentative arrangements to meet while in hospital.

While they smoked outdoors they described feelings of being "social outcasts," being "designated" and "feeling singled out" in the settings where they are required to leave when they smoke, despite their feeling of closeness and camaraderie with other smokers.

1.6: We're treated like dirt I think. It doesn't matter where I am, if I go somewhere where you have to go out of the room to smoke and you run into someone who's doing the same thing, you relate to them. It's the same. It's like `Hi there!'

A second pattern emerged as the informants discussed smoking camaraderie. There was a sense that smokers, when they band together for a cigarette, have more fun than non-smokers.

1.13: I was a smoker, so I sat at the back of the bus. We had a far better time than the people that didn't smoke at the front. They were all quiet, stick-in-the-muds. We were able to communicate because, - "have you got a light?" and you automatically start chatting.

When others made remarks about these informants' smoking behaviour during pregnancy, or when they were sent outdoors to smoke, they felt ostracized, judged and criticized. They perceived others as trying to control their behaviour, and perceived smoking as one area in which they had choice and could exercise control. They exercised that control by banding together and by continuing to smoke.

Cognitive Reactions

Doing paper work on the job, studying and writing letters, driving and planning were also identified and verified as reasons for continued smoking: smoking "to help me think." Three distinct cognitive concepts emerged from the interviews: smoking to increase concentration, smoking for reality orientation, and smoking to increase stimulation. Again, the less distinct concept of "taking time" emerged. Taking time cuts through all of the cognitive dimensions. It seems that one must first stop, take the time to have a cigarette and then concentration is increased, one is stimulated, or one can return to reality.

> 1.11: I can't stand up and just have a cigarette and just start thinking. I have to take the time and look at it and have a cigarette and I feel I can concentrate far better, sit down and look at the problem or whatever.

Smoking to Increase Concentration. A cigarette was deemed necessary to increase concentration when "the project is getting boring," when "I think it's too hard for me" or "when I want to stop working but I shouldn't." The following informant's remark captures smoking to increase concentration.

> 1.11: ...if you're really stuck...going through instructions...you can't figure it out and you're getting kind of flustered...you have a cigarette, you take a little time, you're not so worked up. Then you can do it. I can just see me now - puff, puff, flick, flick, think, think...

Smoking to Increase Stimulation. A cigarette was described as being required to increase stimulation when "driving and thinking," "to keep awake and keep thinking," to assist in beginning to work and to continue to work on a difficult project.

1.11: "a cigarette helps me face up to getting out the paper, the pens. I need it to get me going."

One informant described a time of very high stress during which she needed to think clearly and remember. She perceived that she needed a cigarette to stimulate clear thought. She had been mistakenly charged with theft.

1.13: When I was in the police department, I wanted that cigarette because I was sure it would help me get my thoughts together, you know, it would have stimulated my thoughts more so I could remember something. I was searching...

Smoking to Reality Orient. Smoking in order to reality orient seemed to be required after long periods of concentration; as one informant described it, to "break concentration."

1.11: It brings you back to reality, you know you calm yourself down, to think, you know, where you are, you think again, and not get flustered. Just take five minutes, have a smoke and go back and look at it again.

1.12: I've been working, working, working, trying to sew something and it's got to be done for such and such a time and then I have a cigarette and I feel I can cope far better now. It kind of gets everything together.

When thinking was required a cigarette was perceived by these informants as helpful. However, some ambiguity filtered throughout the comments about thinking and smoking. It seems "it depends:"

R: How is it that a cigarette could help you concentrate, yet help you not concentrate?

1.11: Well, it depends upon your mood too, you know. If you want to concentrate then definitely then it's going to make you concentrate, but if you're tired of concentrating and want to relax, that cigarette will make you relax.

Social Factors

Social factors are those situations in which the informants described smoking in response to concerns about themselves in a public situation; situations such as being at a party, having guests in their homes, and conversing with others. Social factors were not isolated from personal, habitual or addictive factors; however, they are shown separately in the model and are described separately in this section because of their "public" component.

It seems that being with others who smoke increased smoking and that being with non-smokers decreased smoking. The reason for the difference was described as having "respect for non-smokers." These informants would not smoke if it appeared to make others uncomfortable. They would either leave the area or wait until later to smoke, both of which usually decreased the amount smoked.

"Interpersonal Reasons" was the label agreed upon by informants doing the card sort to describe the feelings elicited as they described smoking in a social situation. Cigarettes were perceived to serve seven functions in a social setting and these will be addressed in the following section.

Smoking for Protection

A cigarette was perceived as protecting these informants from being seen by others in the same way as they perceive themselves.

1.1: It covers up the fact that I'm terrified of something. The shy person in me is almost always there. It [cigarette] calms the shakies the shy person has. Because I've been in situations where that shy person has sort of overwhelmed me. In a big group I go, oh my God, give me a cigarette.

R: You don't want people to see that shy person?

1.1: No. When people knew I was shy, I wasn't very happy. The shy person creeps out and needs a cigarette to calm itself [sic] back down and dissipate into the years.

1.11: I mean you're trying to put your best foot forward and so you're pretending to be more confident than you are. So you smoke.

Additionally, a cigarette was perceived as protecting some informants from doing what they were not willing to do.

1.12: Sometimes I smoke so I don't have to go to bed with him. He'll say, "it's bedtime" and I'll say "oh well, I'll just have a cigarette, go ahead without me." I know it sounds really bad, but it protects me. I'm putting my foot down. I'm saying, no. I'm trying to make him stop controlling me.

Cigarettes were also described as protecting several informants from the intensity of a difficult conversation.

2.2: You know, eyeball to eyeball, and what you want to say is hard, or you don't want to have to say it, you look down, you look at your smokes, you think -- it gives you a break, a moment. Somehow it helps...

Smoking to Facilitate Conversation

All informants agreed that smoking makes conversation easier. Cigarettes were perceived as useful to begin a conversation; "May I share your ashtray?" or "Have you got a light?" were often used to begin a conversation; ..."it's like you kind of push yourself into the conversation, so you're part of it." Cigarettes were also perceived as useful to continue a conversation; to ..."fill a gap - if you don't have something to say, you take a puff on your cigarette and then the conversation goes on."

Additionally, several informants perceived that cigarette smokers were more talkative..."we always have things to say" as opposed to non-smokers who..."aren't talking worth beans." Smokers were perceived to be more interesting and friendly..."the neatest people are in the smokers' lounge."

Smoking to Provide Time to Think

The act of reaching for a cigarette package, "digging" a cigarette out of the package was perceived partially as a "time out to think" and partially as an activity to occupy their hands in a social situation. As one reaches for a cigarette, one also reaches for something to say.

> 2.10: I've been stuck into situations where I reach for a cigarette, like when I'm stuck for words, I'm talking to someone and I'm trying to think of a word to say, to use it properly - thinking, knowing that I don't know what I'm talking about. I would stop, light up a cigarette, take a drag and in the meantime, think of something.

Smoking to Occupy Hands

Occupying hands was perceived as important in social situations. Having one's hands occupied was related to pretending to feel confident and secure.

1.2: I guess it makes you feel more confident because you're not sitting there, flipping your hands around all the time.

2.11: If you've always smoked, you rely on it. It's hand-occupying. ...if you've never built up the self-confidence that non-smokers do, [sic] I mean I don't know what they do, what do they do with their hands?

Smoking to Relieve Boredom

Smoking due to boredom in social situations was more noticeable in pregnancy than prior to pregnancy. It seemed this was due in part to the fatigue of pregnancy and in part to the need to be cautious regarding prenatal health. These informants were not "partying and having a good time" as some had done prior to pregnancy. As a result of not being included in the party atmosphere, they smoked more. The following informant describes smoking due to boredom.

1.10: In larger crowds, I just sort of sit back. I'm bored. Like I notice if I'm bored now because everybody's partying, getting drunk, having a good time. I'm just sitting and going, "you guys are idiots."

R: And what are you doing about the boredom?

1.10: I'm smoking! I'm so bored!

Another informant saw a relationship between boredom, the need for psychological escape and the need to smoke.

1.12: ...at a meeting when I'm bored, it's an escape, to give me time to get inside my head instead of feeling oh, I should be at least observant or I should put on this role. This way I could have a cigarette and soak back into my head I guess.

Smoking to Exit

Smoking to exit was perceived as "a time-out" and was deemed necessary because of discomfort in a social setting. Exiting from a conversation meant that they intended to return. Exiting was required when these informants needed "...time to think about what to say next," "...time to think about ways to be included in a conversation" and "...time to decide whether they could cope with the content of the conversation."

1.11: ...an excuse to go somewhere, get something and come back, you know. Like excuse me, I'm going to get an ashtray, and away you go. You're not confined, you don't have to stand there. But yeah, you go back.

Smoking To Escape

Some informants described one function of the cigarette as an "escape route." "Escape" differed from "exit;" the smoker had no intention of returning to the social situation from which she had escaped.

R: How do you mean "escape route?"

1.7: Oh yeah, definitely, like you're real uncomfortable with a situation. It's like yeah, I just have to get a cigarette, and I'll be back, but no way am I going back!

Others described the escape function of smoking as more of a "psychological escape."

1.6: You just get by yourself, then there's no one else around, it's just you and your cigarette. No one around to bug you, or stare at you. Especially when you're pregnant...oh, I hate smoking around anyone when I'm pregnant - yeah, just you and your cigarette.

Smoking facilitated feelings of comfort and control in social situations for the informants that participated in this study. It seems that being shy, having little to add to a conversation and feelings of discomfort could all be overcome with the assistance of a cigarette.

Habitual and Addictive Factors

The concepts of habitual and addictive cigarette smoking cut through many dimensions of both the Reasons for Continued Smoking Model and the Health Education Model. Habits and addictions were complicating variables to describe. The following remark summarizes the difficulty the informants had in describing and differentiating the two.

> 1.11: I don't know about addiction. I think smoking is a habit, but, I mean, I guess everyone probably is addicted to them. I mean, you know nicotine, it gives you that certain feeling, so I guess it's an addiction. I just like to think of it as a habit I guess.

The difficulty in description stems from two sources. Firstly, these women had not previously thought analytically about their smoking, and second, the concept of being addicted to cigarettes was a concept that was clearly uncomfortable for some. "I like to think of it more as just a long habit."

The discomfort in being addicted to cigarettes was also evident during analysis of the informant diaries. "Habit" was the most frequent "reason to smoke" listed. Remarks about "addiction" and "craving" did not appear in any diary.

The informants seemed to prefer to perceive themselves as habitual smokers. Indeed, some of the observed smoking behaviour, interview remarks and diary notations support Hunt's (1970) criteria for habit as an automatic, ritualistic and over-learned behaviour. Diary notations were consistent. They smoked..."with a cup of coffee"..."after supper"..."putting on my make-up" and..."always when I drive." However, many remarks and diary notations also met the criteria for addictive smoking (Glover et al., 1982). Dependence was apparent in interview and diary remarks..."because it's just in my head"..."it just seems to be time," and..."it helps my stress." Remarks about the presence of cigarettes in the home, not necessarily to smoke, perhaps burning in the ashtray, but just to be there, further indicates dependence. Dependence was implied when some informants left the public health clinic at -28°C in order to smoke. Withdrawal was jokingly remarked upon during an observation at intermission at prenatal classes, "There's a trade-off here. Either you shake from the cold, or you shake from lack of nicotine."

While there was some initial disagreement, there was evidence within the interviews that habitual and addictive smoking were perceived as distinct and separate reasons for smoking. This distinction was verified by the secondary informants.

> 1.12: ...I can do without it a lot of the time. I think if it were an addiction, I wouldn't be able to. Habit is more of a pattern thing, addiction is I need to smoke.

Despite the many personal and social reasons chosen to explain continued smoking, all informants in this study were convinced that either habit or addiction were prevalent and powerful reasons for continued smoking. The potency of both habitual and addictive factors is captured by the following remark:

> 1.13: Well, if you can keep control of the addiction, or even the habit, you wouldn't have either the personal and emotional reasons for smoking. You would still have the problems but you wouldn't have the smoking and that's the issue. If you can kick the addiction and break the habit, you've conquered all.

Habitual Factors

Five categories of habitual reasons to smoke emerged: ritualistic smoking, supportive smoking, bored smoking, anticipatory smoking and automatic smoking.

Smoking for Ritual. The ritualistic cigarette was one that was "part and parcel of my day." It was a crucial component of daily routine. Without the cigarette, the ritual was not right. All informants described an "after a meal cigarette" as a very important and satisfying ritual. This cigarette "tastes the best" and it was suggested that this cigarette "completes a cycle, and gives a feeling of fulfillment" after a meal. Without this cigarette the meal doesn't seem complete. Some informants suggested they would continue to eat, although not hungry, if they were denied this cigarette. For some, a cigarette "starts your day." Without it, something is wrong for the entire day.

1.10: I get up and have my coffee and cigarette. And then you know, I'm fine. You can talk to me about anything. Don't talk to me until then though.

1.9: ...isn't that the way to start your day? Nice, cool, sit back and relax, you're clean, you've had your shower and your coffee. That's a nice way to start your day, you know?

Another informant described her ritualistic smoking as "programmed."

1.6: ..."on the way to work, I had a cigarette at the same light, every day; the same street, the same light every day."

Smoking for Support. The supportive cigarette emerged from analysis of habitual smoking patterns as well. The cigarette that was used for support need not be completely smoked; it can be smoked but it can also burn in the ashtray. It's presence is thought to be supportive.

2.11: When I'm sewing or something - I guess that's support. My hands are busy you know and I'm not really smoking it but it's just nice to have it there, you know?

When describing this cigarette some informants used terms as "it's a buddy," "it's security," as if it were perceived as a friend. The presence of the smell of smoke was important to some informants.

1.10: I'm not thinking, I'm lighting them up, they're burning in the ashtray. I don't know; there's some satisfaction there...just the smell.

Anticipatory Smoking. Anticipatory cigarettes were also seen as a component of habitual smoking. The anticipatory cigarette is the one that is smoked in anticipation of not being able to smoke in the near future. This cigarette is not clearly distinct from the ritualistic cigarette; it seems that there are ritualistic cigarettes that would not be anticipatory in nature; however, most anticipatory cigarettes would be ritualistic.

> 1.11: ...I know I have time to fit one in before I get to the mall, or before I get to work. As soon as I get in the truck I pull out my cigarettes. I mean I take my glasses out of my purse, I take my cigarettes out of my purse. I lay them on the seat beside me so that they're handy, because I know I can fit one in...

Smoking due to Boredom. A fourth category of habitual smoking was described as the cigarette that one smokes out of boredom.

> 1.8: ...you don't need a cigarette when you're watching T.V. I mean I have one just because I'm not doing anything else, so I might as well have a cigarette.

Automatic Smoking. The automatic cigarette was perceived as resting in both the habitual and addictive categories. The automatic cigarette is smoked without thought, consideration or recognition of need.

> 2.11: It wasn't a conscious thing. I wouldn't stop and say, now I'll have a cigarette. It would just happen. I can be working, even with my hands, and it just happens.

Addictive Factors

Habitual smoking was perceived as hard to control, but controllable. The distinguishing feature that addictive smoking carried with it was the connotation of inability to control it. It was often compared to other addictive drugs such as heroine and cocaine.

1.7: ...the side effects of nicotine are almost as bad as coming down off heroine. It's true! I really believe it.

1.10: I have no control over it, basically, it's an addiction.

1.11: I guess it is an addiction in a way. I mean, I do want those cigarettes, or need them. Even more than thinking about the baby...

The addictive cigarette is also described as giving "that certain feeling," "a lift," "to get yourself going" and "a fix." "It's a miracle drug" is the way one informant described smoking as she described how the variables of mood and environment can interact to determine the feeling outcomes.

1.11: It can stimulate you, if that's what you want. It can relax you if that's what you want. It depends on, I don't know, your mood, I guess and what's going on for you.

Analysis of the data on addictive smoking resulted in four types of addictive smoking: smoking due to craving, smoking that is depended upon, smoking that prevents withdrawal symptoms, and again automatic smoking.

Smoking due to Craving. The craved cigarette is an absolute requirement. Craving is like a thirst that has to be relieved. The cigarette meets a need that nothing else would meet. The sense of need is captured in the following remarks.

1.10: You know, like when you've been thirsty, for a long time - oooh - nothing like it.

1.8: I'll never make it through the day without having one.

As the informants described the craved cigarette, there was a ring of desperation and helplessness in some of their remarks.

1.10: I didn't want to bum cigarettes off anybody, or bum money off anybody, so I held out as long as I could until I could get to the bank. And I couldn't hack it anymore. I had to go borrow some money off someone...

1.12: It's like a fight within yourself, and you keep saying you don't need it, you don't need it, you don't need it...

Craving for a cigarette was occasionally dealt with in a humorous way. During the observation portion of data collection at prenatal classes, two informants consistently left the building during the "break" in order to smoke. The researcher joined them outside. The temperature was -28°C.

R: Is this the kind of cigarette you might call craved?

1.8: Yeah, I thought we'd never get a break.

R: Don't your hands freeze?

1.8: No, you get used to it - you just keep changing which hand goes in the pocket!

Dependent Smoking. Cigarettes are depended upon for their presence. The presence of cigarettes, in a purse, in the refrigerator or in a cupboard gave the informants a sense of control. When cigarettes were not immediately available, several informants described a sense of "panic" and "anxiety." This was especially but not exclusively true if attempts were being made to reduce or quit smoking. When cigarettes were present in the house, or the purses, and readily available, the anxiety was reduced.

1.3: I'm always stocked up, I've never been caught short. If I am, he's out to the store. And I've had a stowaway pack up in the cupboard just in case it ever happens, old, dried out, stale, just in case.

1.13: The fact that I didn't have any in, you know, that was driving me crazy. I got all shaky.

Smoking Due to Fear of Withdrawal. All informants in the study had made previous attempts at smoking cessation. Not all had suffered withdrawal symptoms. Additionally, some women described opposite experiences during two different cessation attempts.

1.12: The first time was easy...no symptoms, no problems at all. You just have to make up your mind. The next time, headaches, the whole bit...

Those informants who had what they described as "problems with withdrawal" described a range of symptoms: "headaches," "moodiness and irritability" to "floating, and like a high when you quit." The worry and the strong belief that to quit smoking would be a difficult and painful experience is captured in the following informant's comments.

1.3: I know each time I quit, I have withdrawal symptoms like you wouldn't believe. It's like a drug. I don't care what anyone says. It's one of the hardest things to get off. It's panic. It's anxiety. A cigarette becomes the main thing in your life.

Differentiating between a cigarette that is craved, one that is depended upon and one that is intended to prevent withdrawal symptoms was difficult for the informants, and a clear distinction was not formulated. Again it appears that "it depends." It depends upon mood, time, the circumstances and the presence or absence of cigarettes.

Implicit in all the remarks addressing addictive smoking is a sense of helplessness and lack of control over the addiction, perhaps best captured by the following informant.

> 1.7: ...you lose your choice, you just...I need that cigarette type of feeling. When you're not hooked, you've got all the reasons as to why you don't want or need a cigarette. But when you're hooked, you have all kinds of reasons why you do want and need it, why you can't go without it. You just lose your choices.

The previous section has addressed the influences of personal, social, habitual and addictive factors on the smoking history and on the current smoking status of the twelve expectant mothers who participated in this study. The following section will address the influence of prenatal education on continued prenatal smoking.

PRENATAL EDUCATION AND CONTINUED PRENATAL SMOKING

The findings presented in this section resulted from analysis of the semi-structured interviews, the card sorts and from the verification interviews with primary and secondary informants. This analysis resulted in the development of a model describing the influence of education on prenatal smoking which is presented in Figure II. The model and the terms used in the model are described in the following section.

Prenatal Education

Prenatal education is defined in this study and referred to in the model (Figure II) as the information typically exchanged as expectant mothers visit their physicians, attend prenatal classes, and read and listen to media resources.

Understood Risks

Understood risks are defined in this study as the awareness of possible untoward fetal outcomes when an expectant mother smokes. Having received information regarding prenatal smoking, most of the expectant mothers in this study understood that there were possible untoward outcomes for the fetus and infant of a smoking mother; however, the degree to which they were understood varied. As well, some risks not found in the literature were suggested by these informants.

All informants listed "low birth-weight" as a possible consequence of smoking during pregnancy; however, the meaning and possible seriousness of a low birth-weight baby was unclear and in some instances unknown: "A small baby is just fine by me!"

In addition to low birth-weight, the informants listed "prematurity," "respiratory problems," "brain damage due to reduced oxygen," "underdeveloped lungs," "problems with brain development," "slowed heart rate," and "flashbacks," as possible problems for the new-born child when an expectant mother smokes.

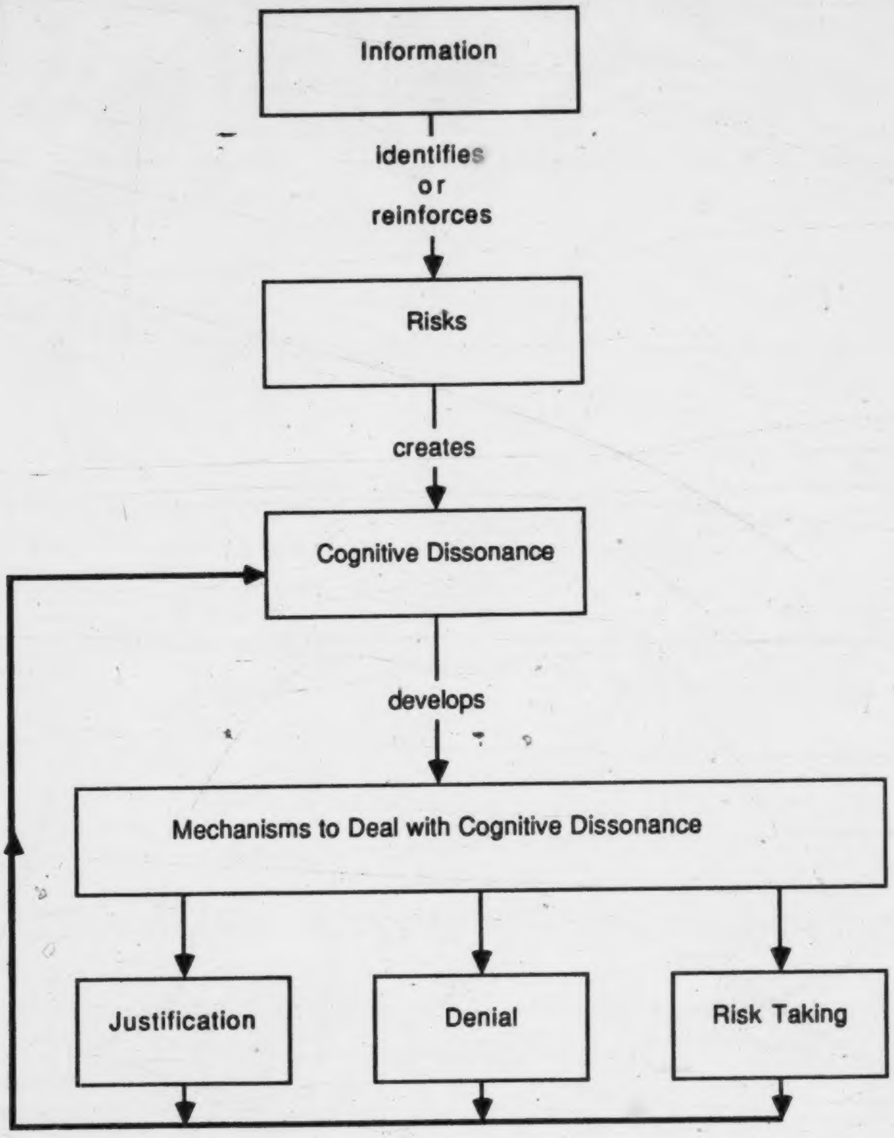
Information
identifies
or
reinforces
Risks
creates
Cognitive Dissonance
develops
Mechanisms to Deal with Cognitive Dissonance
Justification
Denial
Risk Taking

Figure 2. The Influence of Prenatal Education on Continued Smoking.

Cognitive Dissonance

Being "psychologically uncomfortable" in response to receiving new information that does not support present behaviors is defined by Pender (1982, p. 17) as "cognitive dissonance." Remarks made by the informants in this study describing their reaction to receiving new information about prenatal smoking is consistent with this term. Several informants explained, "knowledge makes you feel bad." This sense of feeling bad following health education is identified in the model (Figure II) as "cognitive dissonance."

All informants agreed that learning the risks of smoking during pregnancy had relevance for them; they believed that their baby might be at risk. However, this knowledge had little impact on their smoking. All but one informant continued to smoke during the study. Of particular concern were remarks that indicated that several informants increased their smoking in response to cognitive dissonance, "feeling bad."

The guilt and the conflict that prenatal smokers felt when faced with prenatal health education regarding smoking is captured by the following informants.

R: Can you tell me what it's like for you when you get information, new or old, about the risks when a mom smokes?

1.4: I hate with a passion that I smoke. It scares the hell out of me when they [prenatal teachers] tell me that. I've felt really guilty. I'm scared. I go through days when I'm really down on myself. I know it can't be any good for this baby, but that's what I'm going to have to live with I guess.

1.3: It's like you're contradicting yourself. You're saying, I want to be healthy, my baby to be healthy. It's like a double standard. You're saying one thing but you're doing another. It must have an effect and I'm concerned about that...it makes me feel bad that I haven't quit yet. It's a big issue, but it's bigger now because I'm carrying a life inside me and I could be affecting it.

1.13: I kept tossing it around in my head. I really got upset. All night I tossed and turned. I thought, what's better for me? To have a cigarette and enjoy it or go through this every night. I dreamt of a deformed baby. It was awful...

These informants were describing cognitive dissonance following health education. Pender (1982) suggests that cognitive dissonance will give rise to pressure, motivating a person to eliminate or reduce it. No uniform method of management for the cognitive dissonance emerged from this data; however, analysis of the interviews revealed that these informants utilized at least one of three possible management mechanisms: a) they justified their continued smoking, b) they denied the possible consequences of continued smoking, and c) they chose to take a risk and continue to smoke. These mechanisms are described in the following section.

Justification

Each mother in this study found at least one way to justify her continued smoking in an attempt to defend herself from the "bad feelings" resulting from new or reinforced knowledge. They found justification for continued smoking by searching their environment for what they perceived to be no censure for their continuing to smoke and/or support for their continued smoking.

Specifically, the informants found justification for their continued smoking in the following ways: a) they perceived lack of guidance from physicians and prenatal teachers, b) they perceived support from the experiences of friends and family who smoked during pregnancy, c) they perceived themselves as being inadequate because of their personality characteristics, e) they perceived lack of proof that smoking was harmful to the fetus, d) they perceived their own level of health and illness as justification for smoking, f) they recalled previous difficult cessation experiences, and g) they perceived that a small baby was a healthy baby. Each source of justification will be addressed in the following section.

The Influence of Physicians' Education

A recurrent theme emerging from the data regarding prenatal smoking education was the theme of minimal impact on smoking behaviour. The information given by physicians regarding smoking was perceived in one of four ways, all of which were considered to have little effect on smoking. Some physicians were perceived as giving information that supported cessation attempts. Some were perceived as giving no information or advice regarding smoking. Some were perceived as giving implied support for continued smoking and others were perceived as giving a "mixed message." The following remarks suggest perceived support for cessation attempts:

1.11: She asked if I smoked and I said yes and she said well, if you can quit, you know, she said I'm not going to force you but she...talked about "crib death" and things like that and she said, "those things really scare me you know"...she wasn't forceful. She was very open and honest and said what she thought and that was it, like the subject was closed.

The following remarks suggest no information or advice from the physician regarding smoking cessation in pregnancy:

R: What did your doctor tell you about smoking and pregnancy?

1.6: Well he didn't say no, you can't, or you'd better quit. Not much at all.

One informant who got little or no information agreed that she did not want any.

1.3: If they ask me if I smoke I say yes, and I don't want to hear any more about it because I don't want to hear all those negative things. I've heard them all, over and over. But the doctor I have now, she's really great. She doesn't ask me about smoking 'cause it hurts. It's not something I do for the fun of it.

The following remarks suggest implied support for continuing to smoke.

1.5: My doctor did not tell me to stop. She asked if I smoke and I said yes and I'll try to cut down or stop. She said "alcohol?" and I said "yeah, the odd one, and the odd glass of wine?" and she said "yeah, the odd one." I said to my husband that's it, I'm not going to smoke, I'm not going to drink, that was when I first found out I was pregnant and after I'd been to the doctor and she said that, it all kind of went out the window.

1.6: She said, "if you really feel like you have to have one, have one...if it's going to cause you more...mental anguish because you can't have one, go ahead and have one."

One mother who was having a "really bad" pregnancy perceived a mixed message from her physician.

1.9: He said, I understand you're going through a bad time. But he's real supportive, he's real understanding. He says quit if you can but it's o.k. if you can't.

Another informant remarked on the "inconsistent" professional advice given.

1.7: He said, "the stress level you're going to be giving the baby, maybe cut back to a cigarette an hour or something." I thought well that's pretty stupid like you've got one doctor saying great quit and another doctor saying, "no, I don't think you should."

Informants generally agreed that they would stop smoking if the advice and/or education given by the physicians had been more explicit and/or if their physicians had insisted they stop smoking. One informant explained this in the following way.

1.1: But I think if the doctors put more emphasis on it [not smoking], less people would smoke. If my doctor said you'd better not, I wouldn't.

The Influence of Public Health Prenatal Teaching

The three major themes that emerged in relation to public health prenatal teaching were that the teaching had little impact on the informants, that the informants got little new knowledge regarding smoking in pregnancy, and that they felt discomfort being a smoker in prenatal classes.

R: Tell me how the prenatal teaching about smoking affected your smoking.

1.6: They didn't seem like...well, this is serious stuff...maybe it's because there wasn't enough emphasis put on it. I mean they didn't spend a whole lot of time on it.

The remarks made by this mother denotes minimal impact of prenatal teaching on smoking behaviour. Additionally, some suggested there was no "new information" and that "their [the nurses'] knowledge wasn't all that great." Another felt "uncomfortable," "guilty" and "dumb" to be a smoker in a prenatal class, while listening to the risks and hazards of smoking. The following statement summarizes the minimal impact on smoking behaviour in response to prenatal teaching:

1.9: They didn't emphasize anything enough...I was interested in hearing about those things, but I suppose what they told me didn't scare me enough to quit. I remember the alcohol part but I think I just closed my ears on the smoking part, basically.

The "hazards of smoking" component of prenatal teaching was regarded by these informants as having little or no impact on their smoking behaviour.

The Influence of Family and Friends' Experiences

All informants in this study used the experience of prenatal smoking of family members and friends as important markers for their decision to a) continue to smoke, b) to reduce smoking or c) to stop smoking. The women who continued to smoke cited examples from their friends and families who had smoked during pregnancy and who had large, healthy-appearing babies.

1.1: ...but one girlfriend had a fourteen-pound baby and she smoked like a "Trojan." She did not want to be pregnant. She never took a vitamin pill, never drank a glass of milk, drank constant coffee the whole time and chain-smoked like a "Trojan"...and she had a fourteen-pound baby boy and when the kid was born the doctor looked at her and said "Thank God you smoked."

1.8: ...it never really scared me that much because of the fact of all the other people that you talk to say, ah, you know, the usual, that "I smoked through my whole pregnancy and my kids were normal..."

Those who continued to smoke, however, found it difficult to ignore the children of friends and family who were born small-for-dates and with difficulties following a smoking pregnancy. However, they were also often able to identify other possible sources of the problem..."she was over forty," "she was sick all through her pregnancy." Interestingly, the influence of friends and family who smoked was perceived differently by the one informant who reduced her smoking during the study and by the informant who was able to stop smoking. These women identified children whose mothers had smoked and who had problems, as support for their decision to cut down and to stop smoking.

1.7: ...my sister-in-law smoked and all three children have allergies and respiratory problems. I don't want that.

Personality Characteristics

In addition to finding justification for their smoking due to perceived inadequacies in prenatal teaching, in physicians' teaching, in the influence of friends and family who smoke, these women justified their smoking based on their self-described personality characteristics. One recurrent personality theme emerged; "not having a strong enough personality" was perceived as justification for continued smoking. The women were asked, "How would you describe yourself?" The responses varied from sad to happy, insecure to secure, judgmental to open-minded. However, when they were asked, during the second round of interviews, to sort cards on which their personality responses had been written, into a pile that a) influenced their smoking behaviour and into a pile that b) did not influence their smoking behaviour, four personality characteristics consistently emerged as influential to smoking: a) I lack self-confidence, b) I am introverted, c) I lack will-power, d) I care too much for other people. The following informant captures her sense of the role of personality when pregnant women smoke.

> 2.9: ...we are people who need to booster ourselves and we have a cigarette as a means to booster ourselves. Well, a cigarette's not going to give it to you, but you don't realize that you know. And we need something extra. It seems like we're looking for it in a cigarette.

Interestingly, the one informant who saw herself as "confident, outgoing and secure" was the one informant who stopped smoking during the study.

The personality characteristics perceived by these women as influential on their smoking are characteristics of persons who lack personal control and power, as described by the following informant.

> 1.6: ...I know there are lots of reasons to stop, I guess, but I just can't convince myself. I guess I'm too selfish and I don't have enough will-power. That's it, my will-power's not strong enough.

Personal Health

Both perceived personal wellness and personal illness emerged as justifications for continued smoking during pregnancy. Most expectant mothers described themselves as "healthy" and "strong" and implied that their good health justified their continued smoking. The following is a typical remark regarding health.

> 1.1: I eat well. I'm strong...there should be no problem.

These women did not feel vulnerable to the effect of cigarette smoke because of their wellness. However, some informants implied that they needed to smoke due to ill health.

> 1.1: If I got sick again, and lost another 20 or 30 pounds, that's going to affect the baby more than my smoking would. Because if my "Crohn's" flares up, it could cause me to lose the baby. My "Crohn's" flares up when I don't smoke.

> 1.4: I was afraid, if I quit, I would lose the baby because I know what a nervous, uptight person I am...one minute laughing, one minute crying.

These women felt vulnerable to what they perceived as the detrimental effects of stopping smoking.

The Experience of Stopping and Starting Again

The experience of attempting to stop smoking was recalled as a painful and difficult time. Each mother had made at least one attempt at smoking cessation. Each had been successful to varying degrees but had suffered personal and interpersonal difficulties during the time of the cessation attempt and had relapsed and returned to smoking. "Management," "coping" and "handling" these difficulties was seen as far more difficult without a cigarette and it was perceived by some that further cessation attempts would be more difficult. In addition, the tensions related to being pregnant seemed to add to the need for a coping mechanism..."tension runs high when you try to quit, and emotions run high when you're pregnant. Double whammy!" Beginning to smoke again, although viewed with differing levels of guilt for some informants, was also seen as "relief" and as a method of coping and problem solving.

1.4: Every time I quit, there's something major happens in my life...a drastic thing. I can't handle it. Like I almost thought I was having a nervous breakdown once there, but I was determined I wasn't going to have a smoke but I knew all I had to do was light up a cigarette and I'd be alright.

R: How would it have helped you?

1.4: I could handle it much better [How?] I don't know, maybe it's psychological but it's just something...I've done that before. I've let things get to me and I light up a smoke and as soon as I do, I'm okay.

Two informants had tried alternative coping methods during their cessation attempts. The informant who was involved in a formal cessation program was learning to "deep-breathe" as a method of stress relief and she was bringing carrot and celery sticks to her place of employment so as to have "...something to do with my hands." Another had learned that "talking more" about her upsets seemed to reduce the need for smoking. The remainder of the informants had generated no alternative coping methods during previous cessation attempts. Having had difficult experiences in cessation attempts, having experienced some relief at having started again, and concerns that quitting may be detrimental to the fetus are strong justifications to continue to smoke during pregnancy.

Lack of Proof

Informants who continued to smoke during this study implied that they would stop smoking if they could find "proof" that cigarette smoking was really causing problems for the fetus. It seems that proof of harm to the fetus could be derived from a clear sense that the baby was a reality, especially in early pregnancy. Not being "scared enough" was a frequent remark made by these informants, and being "scared enough" to stop smoking would result if they could "see," "hear" or "feel" from the fetus, or from their own bodies, some signal that harm was being done. Because this information was not available to them, all but one continued to smoke.

2.10: ...well that's just words. They aren't really showing me. I'm the type of person where you have to put it in front of me and say, okay, this is what's going to happen, or this is how it's going to happen. Then I'll believe you. Otherwise I have to see it to believe it. Nobody really scared me enough to quit. They would have to show me something pretty---

R: What would it have to be?

2.10: When the mother takes a drag, what happens to the child? That would make me think about it more...I can't feel the harm I'm doing to it and I can't see it so I don't think it's real...I just can't see the harm I'm doing.

1.11: I mean, if this baby...I guess you don't think of it as real because it's not here. I mean if it was crying and I was smoking and it was like choking and it's nose was stuffed up, I wouldn't smoke, but, I mean, it's not. I guess it's doing something, but I can't feel that it's doing anything wrong...it's hard for me to associate smoking and harming you know?

Conversely, the one informant who stopped smoking, although she didn't have first-hand information about the effects of smoking in pregnancy, felt she had enough proof that smoking was harmful.

2.9: The baby doesn't seem real? Well that's funny! You should watch W5 more often because it's on there. Other people told me about it...the baby is actually jerking when you have a smoke. They've shown it on ultrasound. I've never seen it, but other people tell me.

Not "feeling" pregnant arose as a second concept regarding reality of the fetus. This was the case during the first round of interviews, early in pregnancy.

1.13: I forget I'm pregnant sometimes. I'll hop in the car and light up - then I'll think, what are you doing? But usually I finish cause I just don't feel pregnant.

A Small Baby is a Healthy Baby

All informants in this study recognized the possibility that their child might be smaller than the child of a non-smoking mother. However, that the child might be small was not perceived as a major problem. In fact for some, a small baby was seen as a positive outcome..."a small baby is fine by me." Lack of understanding of the consequences of low birth-weight is captured in the following remarks.

R: What about low birth-weight? What does that mean?

1.1: ...You know, to me, having a baby with small birth-weight or something just isn't, you know, a big deal.

Again, for the informant who stopped smoking, the possibility of a small-for-dates baby had the opposite effect.

1.9: ...then all of a sudden the brain doesn't develop properly. You think what's a little bit of cigarette smoke going to do. God I'm glad I stopped.

Most informants justified their smoking in order to resolve cognitive dissonance. A second mechanism utilized by these informants to resolve cognitive dissonance is described in the following section.

Denial

Analysis of the data revealed a second mechanism through which these informants resolved their cognitive dissonance: the mechanism of denial. Denial is evidenced by the following remarks.

> 1.8: A lot of things I don't want to face, I put in the back of my mind. It just seems easier that way. If you think about it a lot, then it doesn't bother you. I think, if you think about it all the time, eventually it's going to get you. I just try and think of something else and that usually leads to something else, and else and else and else and then, you know how you start thinking of one thing and then about the tenth thing you think about is not related to the first thing?

The above informant is describing a process of distracting her thinking from the harmful effects of cigarette smoking, of attempting to reject her worries and concerns and of trying to ignore the possible consequences of her smoking behaviour.

Risk-Taking

The third mechanism designed to resolve cognitive dissonance was the mechanism of risk-taking. Risk-taking required consideration of the possible untoward outcomes of prenatal smoking. These informants made the decision to "take a chance and live with the consequences." One informant described this process of risk-taking as the "it won't happen to me syndrome."

Of the three mechanisms, risk-taking was the hardest to resolve in these mothers' minds. One informant cried as she discussed the chances she had taken during this pregnancy. Her remarks captured the painful process of being a risk-taker.

1.4: Well, I think any person is afraid of having a deformed or retarded child anyway. Smoking just adds to that awful feeling inside. It's hard to deal with [Yes] but I'll just have to wait and see. As far as I know, my baby's fine. And that's the way I have to think. I mean my mother smoked and her mother smoked and....Well, I just have to think positive.

Several informants also implied that, although they recognized there was risk in smoking, the risk was really not all that great because they had indicators that showed them that the baby seemed to be well, that..."the ultrasound was okay," that... "my weight is good," that..."the baby is very active in there," and that if there was a very big risk their "bodies would give some signal to stop smoking."

The strategies of justification, denial and risk-taking were rarely mutually exclusive and rarely was only one strategy used by the informants. One informant perceived the strategies as sequential.

2.11: "First you take a chance, then you justify it, then you have to distract yourself."

The secondary informants who verified the model suggested that the use of these strategies was effective for a time in relieving the "bad feelings," but that when the next cigarette was required, the "bad feelings" (the cognitive dissonance) returned.

Education and information regarding smoking risks were described as more important during pregnancy than ever before. Prior to pregnancy, education about smoking was taken "with a grain of salt." During pregnancy, the information seemed "more relevant," and more "weighty."

However, despite the efforts of physicians, prenatal teachers and media sources to educate, inform and change the smoking behaviour of the participants, there was little or no change for most. These women were previously reasonably well-informed regarding the risks of prenatal smoking, and when more information was given, they described the information as making them "feel bad." Neither provision of information nor the resultant discomfort caused by cognitive dissonance persuaded them to stop or reduce their smoking. All but one informant found strategies which allowed them to continue to smoke while alleviating the discomfort created when they received information which suggested that their established habit might result in harm to the unborn baby.

Three strategies for the relief of cognitive dissonance were identified and verified. The informants either justified their continued smoking, distracted themselves from the possible untoward consequences, or took a chance in full awareness of the potential risks of their action. Most informants used these strategies effectively, and continued to smoke. The strategies were ineffective for two women, one of whom was able to reduce her smoking considerably, while the second stopped smoking during the course of the study.

Birthweights

The initial intent of this research was not to monitor the birthweights of the children born to the informants who participated in this study. However, in the course of the researcher's employment, this information became available. While causal relationships cannot be implied the birthweights do provide interesting outcome data. The birthweights ranged from 4 lbs 2 oz to 8 lbs 2 oz; however, four of the original thirteen informants delivered children whose birthweights were five pounds or less.

SUMMARY

The purpose of this study was to understand the phenomenon of smoking during pregnancy in light of the anti-smoking information and advice available to prenatal smokers. Analysis of the data obtained from the semi-structured interviews, informant diaries and non-participant observation resulted in the development of a model describing reasons for continued smoking during pregnancy and a model describing the influence of education on continued prenatal smoking.

The model describing reasons for continued smoking showed the influence of personal, social, habitual and addictive factors on prenatal smoking. Additionally, it showed that while these factors do influence the smoking behaviour of expectant mothers, the underlying need for control over these factors was a more pivotol need for these informants. Smoking was shown to provide a sense of control in situations in which the informants felt they had little control.

The findings depicted in the model addressing prenatal health education and its impact on smoking showed that health education, as it is practiced today, impacts none of the subjective reasons for continued prenatal smoking. The study findings described the negative influence of cognitive dissonance and suggested that prenatal education, as it is practiced today, adds little impetus for smoking cessation and that most expectant mothers who attend prenatal classes continue to smoke.

CHAPTER V

CONCLUSIONS AND DISCUSSION

The purpose of this study was to examine and describe the experience of smoking as it was perceived by the expectant mother during pregnancy. The intent was to discover those factors that expectant mothers believed to be relevant to her continued prenatal smoking in light of available anti-smoking education and information.

In this chapter the findings will be discussed, in light of selected existing smoking literature, particularly literature addressing smoking during pregnancy. A critique of the methods used will be undertaken and the implications for nursing research and nursing practice will be discussed.

The questions which initiated this research will provide a framework for discussion. The questions were: a) What does the expectant mother perceive to be the influences on her smoking behaviour? b) What purpose does the expectant mother believe smoking holds for her? c) How does the expectant mother describe the risks of smoking during pregnancy? d) How does she weigh the risks and purposes and continue to smoke?

The findings from this study indicate that expectant women continue to smoke during pregnancy due to the influence of four variables on which health education regarding the risks and hazards of smoking has little impact. These variables, identified as personal, social, habitual and addictive factors, were perceived by expectant mothers as reasons for continued smoking. The underlying goal of smoking was shown to be the maintenance of control. Smoking was perceived by the informants who participated in this study to aid in the control of their emotions, of their family relationships, of their social relationships and their weight. While these informants were reasonably well informed regarding the risks of smoking during pregnancy, the potency of these factors were shown to outweigh the influence of this information and any further anti-smoking health education.

The first question, "What does the expectant mother perceive to be the influences on her smoking behaviour?," will be discussed in the following section. The expectant mother's smoking history--initiation, cessation attempts and relapses--were found to be an important influence on continued prenatal smoking.

SMOKING HISTORY

As the women who participated in this study described their smoking history, it was apparent that social, personal, habitual and addictive factors were influential to early smoking behaviour, just as these factors continue to influence smoking behaviour today. In the following section these four factors will be described in relationship to the literature and as they relate to the informants' smoking history.

Social Factors

Both parents and peers were shown in this study to be powerful factors influencing smoking initiation. This is consistent with much of the literature addressing smoking during adolescence (Botvin, Eng & Williams, 1980; Malcolm & Shepherd, 1978; McAlister, Perry & Macoby, 1979; Urberg & Robbins, 1981). There is argument in the research regarding the weight of each.

Malcolm and Shepherd (1978) argue that the influence of peers is equal to that of parents,that there is a four-fold increase in the risk that the adolescent would smoke if both parents and peers smoke. However, Riddell (1983) argues that the influence of parents is stronger than that of peers. The weight differential of the influence of parents and peers was not addressed by the informants in this study; however, the influence of both was recalled clearly by all informants.

Also consistent with the findings from this study are McAlister's findings (McAlister et al., 1979), that favorite peers directly influence the decision to smoke. In addition, McAlister et al. (1979) describe peer pressure as explicit pressure, that is, name calling and/or exclusion from the peer group when an adolescent does not smoke. While explicit pressure to smoke in order to be accepted was addressed by these informants, a related but different finding with regard to peer pressure was suggested as well.

Peer pressure was recalled by these informants both as a covert and an overt process. Some informants described putting pressure on themselves to try to be liked and to be accepted by friends in whose group they wished to be included. They described this pressure as different from name calling and exclusion, yet this covert process was labelled as peer pressure as well. This implies a broader scope to the definition of peer pressure and suggests a variety of influences that may or may not consist of pressure on adolescents to smoke. This finding is consistent with Riddell (1983) who stated, "The term "peer pressure" is too often used, by researchers and subjects alike, to describe a variety of peer influences that actually include little pressure" (p. 216).

Evans (1976) discussed parental influences on adolescent smoking, suggesting that the exact mechanism of parental influence is unclear. He suggested that when parents smoke, they may be seen as role models, and that they may show greater permissiveness toward smoking. This is consistent, in part, with the findings from this study. For some informants, the role-model influence of parental smoking was perceived and smoking was perceived as a "family norm." However, non-smoking parents who were resistant to their daughter's smoking were considered to be influential on the initiation of smoking as well. These informants described a process of manipulation of their parents in order to gain permission to smoke.

Urberg and Robbins (1981) suggest that girls tend to smoke during adolescence due to rebellion. Rebellion may be one way to consider the manipulative behaviour described; however, another way to examine the influence of strict rules regarding adolescent smoking might be to consider the increased reasoning skills of adolescents as described by Schneider and Vanmastright (1974). They argue that adolescents begin to question previous limits on their behaviour, and that this leads to experimentation with new, previously condemned behaviors. From this perspective, the informants in this study, rather than being seen as "rebellious," might be seen as beginning to question limits placed on their behaviour in an effort to gain some control over their lives. It would be logical, from their perspective, to consider smoking as providing one mechanism for personal control.

Personal Factors

The women who participated in this study recalled smoking as a solution to a problem. The problem was identified as a need to change their image, a need to be "cool," and a need to feel better about themselves. They recalled being shy and lacking self-confidence. Smoking provided for them an image of a competent, confident teenager. This is consistent with the work of Botvin, Eng and Williams (1980) who describe such psychological factors as low self-esteem and lack of self-confidence as primary causes of adolescent cigarette smoking. However, other characteristics of adolescent smokers found in the literature--rebelliousness (Stewart & Levison, 1966), social confidence (Veldman & Brownman, 1969), arousal seeking (Walker, Nicolay & Kluczny, 1969)—were inconsistent with the recalled personality characteristics of these informants. The exception of the few who broke the rules regarding smoking and who might be considered rebellious has been addressed in the previous section.

Researchers and program planners must be cautious in the interpretation of personality characteristics associated with smoking. These factors often have been studied in relative isolation from other potential influences on smoking. The possibility of the multidimensional reasons for smoking have frequently been over-looked.

Habitual and Addictive Factors

The informants in this study expressed ambiguity regarding how and when smoking became habitual and addictive during smoking initiation. Lack of clarity appears in the literature as well.

Murray and Cracknell (1980) address the developmental changes in the perceived pleasures of smoking as if they might progress from the enhancement of societal stature to the use of cigarettes for a sedative effect. McAlister and Perry (1979) state that "given the dependence-producing nature of tobacco, there is a strong likelihood that its use will often continue after it has lost its social attractiveness" (p. 652). These remarks do not appear to have been generated from a research base nor have researchers been stimulated to pursue the validity of these remarks in later studies. The uncertainty in the literature regarding habitual and addictive smoking was reflected in the remarks of the informants who participated in this study. Certainly, the concept of early social attractiveness was addressed by the informants; however, the concept of "progression" (Murray & Cracknell, 1980) for a sedative effect was obscure.

Smoking for Control During Adolescence

The findings of this study showed smoking in adolescence to be a socially meaningful, purposeful act, rather than a passive response to the stimuli of peers, family and personality. It was postulated in this study that these adolescent women smoked in order to control and regulate their social status, their peer selection, their parents' attitudes, and their feelings about themselves. This appears to be a new finding. No research was found to support or negate this finding. This implies a new meaning attributed to smoking during adolescence and requires further research and understanding by health educators.

SMOKING CESSATION AND RELAPSE

The salience of the four factors shifted as the women who participated in this study described cessation attempts and relapses to previous smoking behaviour. They described habitual and addictive factors as the more potent factors at the time of cessation attempts and consequent smoking relapses.

It was within the context of regaining control of an interpersonal, social or intrapersonal crisis that these women often addressed their smoking habits, addictions and the process of relapse. This is partially consistent with the work of Hirvonmen (1983) who argues that, for women, home milieu and exceptional situations are the most common conditions under which women relapse to previous smoking behaviour. Specifically and consistent with these informants' remarks, he lists "personal difficulties" (family troubles, worry and misfortune), "psychic symptoms" (depression and anxiety), "other symptoms" (weight increase or withdrawal symptoms), "and having company" (celebrations and travel) as commonly described reasons for relapse (p. 217).

While many of these reasons are consistent with the reasons for relapse listed by the participants in this study, again the underlying explanation for relapse described in this study was not addressed in the literature; that is, smoking in order to regain or maintain control of disruptions within these areas of their lives. As these informants explained, "a cigarette would fix everything." Each informant who described cigarettes as an aid for control recognized that nothing really changed in their lives as a result of smoking. However, in many ways, everything changed. The crisis situation, the upset, angry feelings, the fear of gaining weight and the concerns about the pregnancy became more manageable. It was within this context that smoking as an addiction was discussed.

The informants showed some consistencies and some inconsistencies with the list of addiction criteria addressed by Glover et al. (1982) and Henningfield (1984): craving, dependence, withdrawal and tolerance. Some informants described and displayed a craving for cigarettes during cessation attempts and during observation. Many described dependence on the presence of cigarettes in their homes as important to reduced anxiety, especially during cessation attempts. Interestingly, and suggestive of the need for further research, these informants showed inconsistencies with the literature as they described their withdrawal symptoms: some described severe physiological and psychological effects of withdrawal, others suggested they had suffered no withdrawal symptoms and others had suffered withdrawal symptoms during one cessation attempt but not during another.

These informants described and showed evidence of inconsistency with the literature descriptions of the concept of tolerance as well. Tolerance, the need for progressively higher doses being required (Henningfield, 1984), was not identified as a component of smoking addiction by these women. They did describe an early increase in the number of cigarettes smoked; however, this was soon followed by a plateau which continues at a consistent level today. This standard, typical number of cigarettes smoked per day was confirmed in their diaries.

The concept of self-attribution of addiction was born out in this study (Eiser et al., 1978). Those informants who hesitated to attribute their smoking to addiction labelled their reason for relapse as, "I just didn't try hard enough." Those who considered themselves to be addicted thought they had relapsed because a "cigarette would fix everything."

The concepts of habit and addiction as they relate to smoking are poorly understood. Noticeably absent in the literature are studies addressing habit and addiction as they relate to smoking during pregnancy. The informants in this study believed that their smoking habits and addiction were a strong influence on smoking during pregnancy in light of the information available and in light of the known risks to the pregnancy.

Following cessation attempts and relapses, all but one participant continued to smoke during pregnancy. This continued smoking will be addressed in the following section.

CONTINUED SMOKING DURING PREGNANCY

The second question addressed in this research project was, "What purpose does the expectant mother believe smoking holds for her?" The following section will address the factors that continue to influence smoking during this pregnancy and the functions cigarettes were perceived as serving.

Personal and Social Factors

The informants again described the purpose of smoking during pregnancy within a framework of the four previously mentioned factors. Again, the weight of the factors shifted. Personal and social factors were potent influences on smoking at this time.

In a personal and social sense, smoking served several functions, many of which were more crucial during pregnancy than prior to becoming pregnant. Societal and family criticisms and judgments, based on the general knowledge that a pregnant woman ought not smoke, were perceived as additional stress and pressure on these women when they smoked.

As a result, cigarettes were deemed necessary to help these women take time to feel calm and relaxed, to relieve anger, to comfort them, to help them escape stressful situations at their places of employment, in their homes, and in their relationships, to distract them, to reward them and to help them control their weight. Smoking was perceived as helping them feel autonomous; that is, they could make their own choices about smoking despite pressure from society, family and friends. Smoking in pregnancy was perceived as providing camaraderie. Smoking was perceived as providing time to help them think, to help them concentrate and for reality orientation after long periods of concentration.

Socially, cigarettes were perceived as protective, as facilitative in conversations, and as a means to occupy their hands. Smoking for relief of boredom was addressed as both a personal and social factor. Smoking as a means to leave an uncomfortable social situation was discussed. The ritual of smoking was perceived as comforting as was the presence of cigarettes in their homes or purses. Smoking was perceived as well to meet craving needs.

Consistent to some degree with these informants regarding the functions of smoking are the smoking typologies identified by Tompkins (1966) and Ikard, Green and Horn (1969). Tompkins identified four types of smoking behaviour: habitual smoking, positive affect smoking, negative affect smoking and addictive smoking. Using data from the Tompkins study, Ikard, Green and Horn (1969) developed a scale of reasons for smoking. They found differences in reasons for smoking between men and women, and postulated that women most often smoke to reduce their negative feelings when they were uncomfortable or upset.

Men were found to indulge in habitual smoking most frequently. In a later study, Ikard and Tompkins (1973) concluded that women smoke mainly for a sedative effect while men smoked for a positive affect.

Some consistencies are apparent in comparing the outcomes of these studies with the informants who participated in the current study. Negative affect control was most frequently mentioned by these informants as a reason to smoke: to calm, to relieve anger, to relax, to comfort. Smoking for pleasure was rarely mentioned (positive affect); however, it might be concluded that smoking to relax and to help cognitive processes could be considered pleasurable. Consistent as well are the concepts of smoking due to craving, due to habitual needs and due to manipulation needs--"something to do with my hands," as identified by Tompkins and Ikard (1973).

The positive relationship between stress (Graham, 1976; Linn & Stein, 1985; Ockene et al., 1981; Rose et al., 1983; Schneider & Huston, 1970; Shor et al., 1981), anxiety (Rose et al., 1983), tension reduction (Christen & Glover, 1983) and smoking was born out in this study as well.

These informants perceived smoking in a similar light to Loken's (1982) subjects. They believed that their smoking would lead to "positive outcomes" (p. 618). The positive outcomes addressed in Loken's study and by these informants were a) keeping weight down, b) relieving nervous tension, c) helping to interact easily, d) helping peer acceptance, e) having something to do with hands, f) helping to relax and g) helping to concentrate.

The personality characteristics addressed in the literature as positively correlated with smoking--extraversion (Eysenk, 1965), autonomy (Simon & Primavera, 1976), and toughmindedness (McManus & Weeks, 1982)--were not concordant with the self-described personality of the women who participated in this study. They described the personality characteristics which influenced their smoking as introversion, shyness, lack of self-confidence and caring too much for others. These inconsistencies perhaps address the need for research that does not consider men and women as an homogeneous group. The possibility that men and women smoke for different reasons has been addressed (Jacobson, 1981, 1986; Urberg & Robbins, 1986), yet most personality attributes studies have considered the sexes as homogeneous and generalizations to both populations are not possible.

Ambiguity is apparent in the literature regarding the support of significant others for smoking and/or smoking cessation. The literature is conflicting and inconclusive (Graham, 1976; Langford et al., 1983; Wagner, 1985). The remarks of the informants in this study were neither inconclusive nor ambiguous. They perceived no support from husbands, family and society for their smoking cessation attempts and felt that remarks made when they smoked provided motivation for continued smoking. These findings imply that what is often intended as support is not always perceived as support and that further study is required to understand this concept.

Given the above findings regarding the perceived purposes and functions of continued smoking during pregnancy, the third and fourth research questions become relevant: "How does the expectant mother describe the risks of smoking during pregnancy?" and "How does she weigh the risks and the purposes smoking holds for her and continue to smoke?" The relevance of health education and information is apparent and will be discussed in the following section.

HEALTH EDUCATION AND CONTINUED SMOKING

Consistent with Graham's (1976) findings, the findings of this study showed that the risks to pregnancy for expectant mothers were reasonably well understood. Graham's (1976) study and the findings of this study also showed that the information exchanged and advice given by physicians, prenatal teachers and media sources had little or no impact on the smoking behaviour of the expectant mothers.

Additionally, this study showed that the information exchanged created discomfort, which was labelled cognitive dissonance. Cognitive dissonance was shown to initiate mechanisms to reject the information and provide support for continued smoking during pregnancy for all but one informant. The following section will address cognitive dissonance theory as it applies to the study outcomes.

Cognitive Dissonance

The theory of cognitive dissonance (Festinger, 1957) is based on a relationship between attitudes and behaviors. It is a motivational theory, and addresses the consistency of cognitive elements (such as attitudes) and an individual's perception regarding his or her behaviour. According to this theory, people are motivated to maintain consistency among their opinions, their beliefs and their behaviour. Cognitive dissonance theory postulates that when an individual holds cognitive elements which are dissonant with one another, there is motivation to bring them into consonance.

Pender (1982) describes two basic assumptions regarding cognitive dissonance. First, that the experience of dissonance, being psychologically uncomfortable, will give rise to pressure, motivating the person to reduce or eliminate it. Second, that the strength of the pressure for dissonance reduction or movement toward stability depends on the magnitude of the dissonance that exists within the opinions, beliefs and behaviors of the individual at any given point in time. The greater the degree of dissonance, the stronger the motivation to reduce it. She suggests that dissonance frequently results from receiving new information that does not support present behaviors; and that individuals seek to reduce dissonance, either by rejecting the new information or by modifying behaviour or beliefs.

Pender (1982) discusses cognitive dissonance and the need for an individual to bring stability (consonance) into his or her life as possible motivation for illness prevention and health promotion behaviors. However, the findings of this study suggest that the cognitive dissonance felt by the informants in response to health education motivated continued illness producing behaviors; that is, continued smoking. It was as if the continued smoking provided stability for these informants.

Windsor et al. (1986) argues that pregnancy is the most opportune time for smoking intervention because of the expectant mother's knowledge of the risks to the fetus. However, other researchers hold that the stress of pregnancy makes smoking cessation education inappropriate, and that smoking becomes an integral part of the coping mechanism during pregnancy (Keely-Loeb, Wage & Baily, 1983). The findings of this study did not support Windsor's argument but lend some support to the concept of added stress.

The suggestion that increased cognitive dissonance might add stress to the pregnant mother and initiate smoking to cope with the stress has not been addressed in the literature; however, the findings from this study suggest this may be the case. Cognitive dissonance following education and advice appeared to motivate all but one informant to utilize three mechanisms to resolve it: they used justification by examining their environment for perceived support for their continued smoking; they chose to take a chance and smoke regardless of the consequences; and/or they smoked and denied that there were possible untoward outcomes. The findings from this study indicate the need for further study regarding the impact of cognitive dissonance in health education.

In addition to cognitive dissonance there were other reasons for these pregnant smokers to reject information that was intended to motivate them to stop smoking. The informants listed perceived lack of expertise, perceived support for continued smoking, perceived mixed messages, and lack of time spent on the smoking issue by health educators and physicians as reasons for continued smoking.

Pender's model for health promotion (Pender, 1982, p. 66) addresses these concerns. She describes the interaction with health professionals as a modifying factor which affects the incidence and consistency of health protecting behaviors. She cites several studies (p. 59) that postulate that the impact of interactions with health professionals facilitated compliance with medical regimens. She suggests a) the greater the perceived credibility of an information source, the more motivational and persuasive the message; and b) if little interaction or discussion takes place, there is minimal compliance. While findings on compliance cannot be generalized to health education and health promotion behaviors, studies addressing the impact of the kind of information given, the time spent and interactive components in health education are indicated.

Smoking for Control

Consistent with Jacobson's (1986) remark that women smoke to "suppress the unacceptable" (p. 87), the women who participated in this study used cigarettes to suppress feelings of anger, upset, stress and tension. They used cigarettes to cope with perceived personality inadequacies and to control their weight. The findings of this study suggest that health education and information was perceived as an additional problem which evoked more uncomfortable feelings that had to be dealt with. The women in the study controlled these feelings by smoking. Jacobson (1986) suggests that women smoke, "not to accompany expressions of frustrations or anxiety, but instead of expressing these feelings." (p. 32). No literature was found that addressed the question, "Why is it necessary for pregnant women to manage their feelings in this way?" An important finding from this study indicated that these women smoked with an underlying goal of maintaining control of their life events. They perceived smoking as assisting them in controlling their negative feelings, their comfort level in social situations, their sense of autonomy and their weight. They used smoking to control their lives; in a sense, to take care of themselves in situations which they perceived as out of control.

In order to understand smoking as a method of control and for self care, four paradigms will be cursorily examined. Three of these paradigms focus on individual responsibility for self care. They will be examined and critiqued for their usefulness in understanding smoking in pregnancy. A fourth paradigm will also be addressed to provide a broader scope of understanding. The first three paradigms--the stress-coping model (Lazarus & Folkman, 1984), the health belief model (HBM) (Becker, Drachman & Kirscht, 1974) and Pender's Modified Health Belief Model (Pender, 1982)--will be examined in the following section.

The Stress-coping Model

Two definitions of stress were found that seemed to relate to these informants' reasons for continued smoking. Selye's theory (1974) defines stressors as factors in the environment that place demands on individuals for adaptation. Lazarus and Folkman (1984) propose an interaction theory of stress and focus on the individual's appraisal of personal and environmental demands and the resources available to the individual to meet those demands. The informants in this study appraised their jobs, their family situations, their difficulties in social situations, their personalities, and education regarding smoking and pregnancy as stressors and considered smoking as a resource available to meet the demands of those stressors as a method of coping.

Multiple conceptualizations of coping abound. Perlman (1975) describes coping as a person's effort to deal with new and often problematic situations or encounters or to deal with an old problem. "Its purpose is mastery or problem-solving at best, or at least, it serves to reduce tension and ameliorate the problem" (p. 217). Perlin and Schooler (1975) expand the concept and link coping to the concept of control. They include in their definition "responses to external life strains that serve to prevent, avoid or control emotional distress" (p. 5).

Smoking as a coping mechanism has been addressed in the literature. Ockene et al. (1981) view smoking as a maladaptive coping response to environmental stressors. Based on this model, the smokers' likelihood of ceasing to smoke on a long term basis is a function of his or her ability to cope with stressors without the use of a cigarette. They suggest that the ability to cope is contingent on the presence of personal assets or coping resources other than cigarettes. They identify personal resources as personal competence, an internal locus of control, and the availability of significant others for emotional support.

Shor et al. (1981) postulate that smoking is an aid in coping with some negative states and describe a general picture of smoking as an avoidance of negative experiences. They disagree with the concept of smoking as a provider of any positive benefits.

Clarke, Macpherson and Holmes (1982) suggest that individuals begin to disengage in efforts to cope with unmanageable situations, yet the need for personal satisfaction persists. Rather than lending efforts to coping, the individual seeks out behaviors that the environment fails to offer and chooses smoking.

Research and program planning for smoking in pregnancy using a coping model would include life skills management in which the women would learn to manage, cope with and maintain control over their feelings, their social situations, their personalities and their weight. The focus would be on their individual responsibility to cope and adapt. Program interventions would include stress management, self-esteem development and decision-making skills, with the focus only on the smoker's individual responsibility. Similarly, utilizing the Health Belief Model (Becker, Drachman & Kirscht, 1974) and Pender's (1982) Modified Health Belief Model to examine prenatal smoking behaviour, the focus would again be on the individual's ability to change. These models will be discussed in the following section.

The Health Belief Model and Pender's Modified Model

The HBM (1974) and Pender's proposed modifications to the HBM (1982) were developed to provide a paradigm for exploring the illness prevention activities of individuals and are useful models through which to explore the smoking behaviour of the informants who participated in this study and the likelihood of their smoking cessation. According to these models, one's behaviour in a particular situation is determined by the way one perceives the world.

Several conditions are important to these models. First, there must be perceived vulnerability or susceptibility to illness which results in a readiness for action. Second, there must be a belief that personal action will addresses the problem and will be effective. This belief is described as self-efficacy. Third, one must perceive that the barriers to action, such as inconvenience or expense, are minimal. Pender (1982) modified the HBM to include individual perceptions of health and individual perceptions of control over his or her health behaviors as important components to her model. She expands on the concept of control by suggesting that one's perceptions of control are mediated by either ethnic background, socio-economic status or child-rearing. She suggests that "further exploration of the concept of control phenomenon is critical to understanding the predisposition to preventive behaviour" (p. 57).

Again, the focus for research and program planning is on the ability of the individual to adapt and change. Either the individual's self-efficacy, sense of susceptibility to disease, or perception of health might be the focus for program planning and research where changing health behaviors is desired.

While it was not intended to present an in-depth discussion of the three models, it becomes clear even on cursory examination that the focus is on the pregnant smoker's ability to change and/or adapt so as to maintain control over the personal, social, habitual and addictive factors thought to be reasons for their continued smoking. However, the development of skills to adapt and to resist successfully the pressures thought to be reasons for smoking may be only one link in the chain of events responsible for continued smoking. In construing health behaviour in such an individualized fashion, the social context in which personal choices are made remains hidden.

Allison (1982) suggests that this focus on individual responsibility diverts attention from other determinants of health status. The following section will include a social-political context in which to examine prenatal smoking. The thesis of this section is that women's social inequality has a bearing on prenatal smoking behaviour.

Social-Political Paradigm

Innes and Ciliska (1982) suggest that little attention has been given to addressing the social context in which personal lifestyle choices are made. "Health and social problems, often age or sex-related, are generated from conditions of poverty, environmental pollution, sexual inequality and cultural bias and are dismissed as political issues rather than considered precursors to poor health." (p. 464).

When health educators use the HBM (Becker, Drachman & Kirscht, 1974), Pender's HBM modification (1982) and the stress-coping model (Lazarus & Folkman, 1984) to examine health behaviors, the assumption is made that health and disease behaviors are wholly an individual phenomenon. The same assumptions hold true in examining many health education and health promotion programs available today.

Labonte and Penfold (1981) suggest the reason that health education and promotion programs reap few of their intended benefits is that they are directed toward the individual. They hold that it is significant that in construing health and disease as a matter largely determined by individual behaviour patterns, health promotion and education programs have thrown a "smokescreen" (p. 4) over a host of factors far more influential in creating illness: poverty, sexual inequality, racism, occupational hazards and industrially created environmental pollution.

To focus only on the individual's ability to change and adapt in terms of coping skills, or on increasing her self-efficacy so as to be able to control her life and take care of herself without smoking runs two risks. The first is the risk of blaming the victim (Allison, 1982).

Blaming the victim occurs when individuals are expected to change and adapt and are individually held liable for situations over which they have little control. Labonte and Penfold (1981) address sexual asymmetry in Canadian society that still relegates women to child-rearing responsibilities, fewer educational and employment opportunities, and only half a man's earning power when they do find a job as situations related to health over which women have little control. They suggest that unless a critical position on women's inferior social status is adopted, individual women will be held individually accountable for the social inequality that clearly influences the dynamics of their health behaviour.

The participants in this study described feeling "badly" and "guilty" following prenatal classes. Perhaps the process of "blaming the victim" was one source of their discomfort during prenatal classes. In subtle, unintentional ways, "blaming the victim" places the responsibility for a person's poor health pattern wholly on the individual.

The second risk in focussing only on the individual's ability to change and adapt is to risk that large areas of women's experiences, particularly the political and social impetus for smoking, will not be examined. The women in this study described their personal problems, angers, social upsets and inadequate personalities as reasons for smoking. They addressed helplessness and dependence as if they were giving in to forces beyond their control. They described these problems as personal problems; however, feminist theorists would argue that personal problems have social and political bases and solutions (Stanley & Wise, 1983). They would argue that what is required by these smoking expectant mothers is a sense of power. Baker-Miller (1987) describes power as "the capacity to make change" (p. 2). Feminist theory would argue additionally that in order to be in control of their lives without cigarettes, changes need to be made in the social and political arenas, rather than implying that women must learn to cope with or adapt to feelings of lack of control.

This is not to suggest that research and program planning addressing women's smoking and health overlook the positive aspects of individual responsibility for self-care nor to suggest that the individual approach is inappropriate. However, the suggestion is that exclusive focus on individual behaviour ignores the social and political environments of women and runs the risk of blaming them for circumstances over which they have little control. Health educators need to become more socially critical and more honest regarding the social-political influences on cigarette use for women. They must be hesitant to place the blame for lifestyle illnesses totally on the individual.

CRITIQUE OF THE METHODS

Three methods of data collection were utilized during this study: semi-structured interviews, informant diaries and non-participant observation. These methods will be discussed in the following section.

Interviews

Semi-structured interviews were the major data collecting technique utilized in this study. The technique proved to be appropriate for the collection of rich data concerning smoking during pregnancy. In retrospect, timing for some of the interviews was inappropriate. For some informants, as many as four weeks lapsed between interviews due to difficulty in scheduling during the Christmas and New Year's season. It was apparent that interest and momentum had been lost and recall of the previous interview was difficult as the second interview and card sorting began. It was during this lapse in time between interviews that one of the diaries was lost.

The process of card sorting proved to be a valuable data source. The informants were more relaxed as they found the process easier and more enjoyable than addressing questions, yet the conversation during the card sorts elicited valuable research information.

Using secondary informants was a valuable process. In addition to verifying the models, their conversation added depth to the understanding of the data.

The Diaries

The diaries kept by the informants were a good data source as well; however, in retrospect, the potential of the smoking diary was probably not realized. The imposition of labelled columns by the researcher may have limited the remarks made by the informants. Frequently, the informants wrote "habit" as a reason to smoke, rather than addressing the feelings and circumstances under which they were smoking. Comments on feelings would probably have added depth of understanding to the data. In retrospect, it would have been more prudent to have used a more open-ended diary technique.

The impact of the diaries on smoking behaviour must be addressed. Two informants remarked on the effect that keeping a smoking diary had on their smoking behaviour. One informant who was successful at cessation during the course of this study claimed that having kept a smoking diary had been helpful in her successful cessation.

> 2.8: When I saw that the only reason to smoke was "habit," "habit," "habit," I decided that wasn't a good enough reason!

Another informant found that keeping a smoking diary had the opposite effect.

> 2.10: When I came to the "reason" section, I just couldn't think of any. It made me so mad at myself. I would just feel so guilty. So I'd smoke and just be mad.

Non-Participant Observation

Data from the non-participant observation portion of the data collection process are somewhat incomplete due in part to the difficulty in observing behaviour while participating in a conversation, and due in part to the fact that some participants did not smoke during data collection.

However, for those who smoked, data collected from the interviews and the diaries were validated.

IMPLICATIONS FOR FURTHER STUDY

Throughout this discussion of previous research findings, the frequent inclusion of men and women as a homogeneous group has been identified. Recently, researchers have suggested that huge areas of women's experiences have been left out because men have dominated the research, the policy making and the messages regarding smoking and health (Jacobson, 1986; Macpherson, 1983).

Achilles (1987) labelled this type of research as sexist research; the failure to account for the differences between sexes and the assumption of differences where none exist. She states that non-sexist research seeks to acknowledge and identify differences without the traditional assumption of inferiority or superiority. Research undertaken from the male perspective which renders women's experience invisible or assumes that women's experience is identical to men's, runs the risk of generalization beyond the population represented in the sample. This is what has occurred in many instances in the smoking literature (Achilles, 1987). Macpherson (1983) adds that sexist research can function to provide rationalizations for existing power distributions, since the sexist paradigm is devoid of any analysis of the inferior status and oppression of women. This perspective would account for the argument that women smoke to reduce "negative affect" (Ikard, Green & Horn, 1969, p. 654), without addressing the next question: why is smoking for this reason necessary?

Eichler (1984) suggests that a compensatory, transitional stage in research is required and that correcting the androcentric (man-centered) bias of the past and current research requires a gynocentric (women-centered) perspective to gather knowledge about women and health. She suggests that such a process will achieve a balance in our knowledge about the health of human beings.

In this regard, research emphasis must be directed toward women, smoking and health. Teenage girls must be addressed in the research. Research on the initiation of smoking from the perspective of the female teenager must be considered. There is support in the literature (Urberg & Robbins, 1984) suggesting that female and male adolescents smoke for different reasons, yet many studies have considered teenaged smokers as an homogeneous group. Many studies have explored the factors that researchers believe are relevant to smoking initiation. In only one study that was reviewed were teenagers asked what factors influenced their smoking decisions. The findings of this study suggest that the initiation of smoking has an impact on continued smoking during adulthood and pregnancy.

Inadequacies of the definition of peer and parental pressure are shown in this study. The term "peer pressure" is too often used to describe a variety of peer influences that may actually include little pressure. The danger in using the term is that it not only may limit our understanding of the dynamics of the interaction but may lead to prevention messages that are simplistic and do not prepare teenage women for the more subtle types of influences they are likely to experience. The failure in the literature to include a variety of definitions of both peer and parental pressure provides support for the inclusion of these dimensions in further study of the acquisition of smoking during adolescence. Further, there is support from the findings of this study for the inclusion of smoking as it relates to a sense of control during adolescence. Potential gender differences must be addressed within this context. This research would provide a more complete picture of smoking initiation by adolescent women.

Validation of the model describing the reasons that expectant women continue to smoke should be a research priority and obvious adjuncts to this study should be included. Qualitative research should address non-pregnant women, women of varying socio-economic status, differing obstetrical parity status and differing marital status. Recent initiatives focussing cigarette advertisements on women of third world countries suggests the need to study women of various cultures. Following validation of this study, the above suggestions would broaden the scope of understanding of women and cigarette smoking.

The literature addressing habits and addictions is ambiguous, conflicting and noticeably absent as it relates to pregnant women and smoking. The need for longitudinal studies which address the concept of tolerance was indicated by the findings from this study in addition to comparative studies addressing smoking withdrawal.

The findings from this study suggest that the concept of control through smoking is a critical issue for women in adolescence, young adulthood and during pregnancy. Definitive understanding of the concept of control is also noticeably absent from the literature. Control through smoking merits further examination.

The model describing the influence of no-smoking advice and information on expectant mothers needs to be verified and validated. The findings from this study suggest that the creation of cognitive dissonance was ineffective as a tool to change health behaviour and the concept of cognitive dissonance as a motivating tool for promoting health behaviors requires further study. Comparative studies utilizing differing teaching techniques should be done. Are some teaching strategies more effective for women than for men?

Men need to be studied in a similar design to this study. There is evidence in the literature to suggest that sex is an important variable in smoking behaviour (Urberg & Robbins, 1981). Comparative questions need to be raised regarding the experiences, situations and biology of the sexes to determine similarities and differences.

IMPLICATIONS FOR PRACTICE

Although results of qualitative studies seldom give adequate information for determining appropriate intervention strategies, assessment of the current programs and direction for change is implied by this study.

The findings indicate that there are subjective reasons for smoking during pregnancy that are neither considered nor addressed by health educators who teach the untoward consequences of cigarette smoking during pregnancy. The findings suggest that by discussing the possible untoward consequences of smoking, health educators may be inadvertently blaming the victim and motivating expectant mothers to smoke in order to resolve their cognitive dissonance.

Some of the mechanisms utilized to resolve cognitive dissonance imply direction for prenatal teaching. A frequent justification for continuing to smoke was the suggestion that prenatal teaching had not "proven" that smoking affected the unborn child. Several informants addressed the need to be "shown." The use of video tapes showing the impact of cigarette smoking on the fetus is implied. This is a cautious suggestion due to the potential risk of increasing guilt and cognitive dissonance which might result in increased smoking. However, the impact of watching such a video was addressed by the one informant who stopped smoking and the possibility that "proof" would result in the reduction or cessation of smoking should be a consideration. The mechanisms of denial and risk-taking would potentially be addressed by this teaching tool as well.

A second justification suggested by the informants who participated in this study was the inefficacy of prenatal teaching. If nurse educators are to continue to address smoking during pregnancy in prenatal teaching, an important implication arising from these findings is the need for them to assess and understand the subjective reasons for, and the values placed upon smoking by the expectant mother. Prenatal teaching would then focus on the potential causes of smoking rather than on the outcomes. Additionally, assessment and understanding of the scope of the reasons for smoking might avert tendencies toward a "blame the victim" stance by prenatal teachers. A third implication follows. If nurses are to educate prenatal smokers, there is a need for the development of nursing expertise and credibility in the field of smoking cessation.

The findings from this study suggest that these informants ought to be taught new skills as opposed to facts. It was apparent from the remarks of these informants that they had difficulty in generating alternative coping, problem-solving and decision-making skills. "Deep breathing," "talking more" and "eating celery and carrot sticks" were the only coping methods mentioned. While a totally individualized focus on personal efficacy, coping and problem-solving has been discouraged for prenatal teaching in this discussion, the value of teaching these skills cannot be negated. These skills should not necessarilty be restricted to smoking but should be examined within a framework of achieving healthy living.

Because concern regarding weight gain was a significant factor identified as a reason to smoke in this and other studies, accurate information regarding the relationship of cigarettes and weight control should be included in prenatal education. Jacobson (1986) destroys the myth of inevitable weight gain. "Although some women gain a few pounds, fifty percent of women who stop gain no weight, and some actually lose weight" (p. 184). Some informants in this study were certain that weight gain followed smoking cessation.

A second myth addressed by these informants could be addressed within the context of prenatal teaching. Many informants suggested they would not likely attempt smoking cessation again because "each try gets harder." Although most smokers attempt cessation on an average of five times before being successful, there is no research to suggest that each attempt becomes more difficult. The possibility stands that with each attempt, something regarding the influences on smoking and/or smoking patterns and/or addictions and/or self-confidence and decision-making skills and/or control is learned, so that the succeeding attempts become less difficult. Prenatal cessation teaching would then consider cessation as a learning process over time as opposed to the success or failure of one cessation attempt (Innes, J., personal communication, May 27, 1988).

The above implications for change in prenatal teaching could perhaps best be accomplished in an expectant woman's self-help support group, facilitated by a nurse educator. The literature supports the value of an all female self-help group (Delarue, 1973; Jacobson, 1983).

The findings from this study imply course content possibilities. It would seem important to include the examination and expression of feelings regarding the special stressors related to women's role in society and the issue of control. Exercises, aimed at developing alternative and healthy modes of coping and increasing decision-making and problem-solving skills, should be a part of prenatal education. Pregnant smokers might then reduce their life stressors, increase their self-efficacy and build a healthy pregnancy. They might ultimately control their lives without the use of cigarettes.

LIMITATIONS OF THE STUDY

The data for this study were obtained from a relatively small sample of individuals. The findings are therefore only generalizable to subjects with the same characteristics as the participants in this study.

The sample was over-represented with similar economic, ethnic, cultural and educative backgrounds. It is possible the attitudes and social supports for smoking may vary with educational and cultural groupings. Further, the use of volunteers suggests that they may not be representative of the total population.

SUMMARY

As the informants who participated in this study described their smoking history and their continued prenatal smoking, four major themes emerged as factors that influenced their smoking behaviour. These were classified as personal, social, habitual and addictive factors.

Personal factors were often described as those feelings which were elicited in reaction to tensions felt at the place of employment and in response to the judgments of significant others. In these situations, cigarettes were perceived as mechanisms for control of their feelings; cigarettes were used by these women to calm, to relax, to distract, to comfort and to escape. In response to judgments and criticisms from significant others and society, smoking was perceived as assisting these women feel a sense of autonomy and a sense of camaraderie with other smokers. Smoking was also perceived as a mechanism for weight control and for control of nervous, fidgeting hands. Frequently, cigarettes were used to help these informants think.

In social situations, cigarettes were perceived as assisting in interpersonal relationships, to facilitate conversations, to protect them from being seen by others as they perceived themselves, and as a mechanism through which they could leave a social situation if they felt uncomfortable; that is, smoking enabled them to feel in control in social situations.

Habitual smoking, because of its ritualistic and customary components, was a mechanism through which some of these informants started their day in just the right way and completed their meals with a sense of satisfaction. In habitual smoking they found comfort and a sense of control over their lives, although this appeared to be a strategy by which they could deceive themselves in situations where they in fact suffered a loss of control.

Addictive smoking was difficult for these informants to identify and discuss as they described their own smoking behaviour. They were similar to problem drinkers and alcoholics (Jaffe, 1977), in that describing themselves as addicts seemed difficult. However, craving cigarettes, depending upon cigarettes and fear of withdrawal from cigarettes were all apparent in the interviews and in observed behaviors.

Personal, social, habitual and addictive factors were apparent influences on the smoking history of these informants and on their current smoking behaviour. The weight, potency and salience of each changed over time. Social and interpersonal factors were the most powerful factors at the time of smoking initiation during adolescence. Personal factors were more powerful as these young women grew to maturity and were important issues as they experienced cessation attempts. Personal and social factors combined with habitual and addictive factors as they relapsed and began to smoke again. Smoking continues today due to an interplay of all four factors.

Prenatal health education was shown to be a factor in continued smoking. Prenatal health education offered no impetus for these women to stop smoking. Rather, education created the discomfort of cognitive dissonance. Rather than being an impetus for cessation, cognitive dissonance was motivation to continue to smoke. Management of cognitive dissonance was accomplished in three ways: the informants either justified their continued smoking in terms of their own personal needs, denied the possible untoward outcomes of smoking on the unborn child or took a risk and continued to smoke. These mechanisms were necessary because of the life events perceived by these women to be more potent reasons to continue to smoke. Health education and cognitive dissonance were not perceived as potent enough phenomenon for smoking cessation. Overriding the information provided regarding smoking during pregnancy were the personal, social, habitual and addictive factors which were described as very powerful incentives to continue to smoke.

Two paradoxes are apparent. Smoking for these informants was shown to be a mechanism for control in circumstances in which they felt little control. As adolescents, they controlled their social life, their acceptance by peers and their parents through cigarette smoking. As they described cessation attempts, and then starting to smoke again, it was evident that they perceived a loss of emotional control during the period of cessation. They then experienced a sense of regaining control when they experienced a crisis, relapsed and smoked again. ..."A cigarette would fix everything."

As they continued to smoke during pregnancy, the issue of control again emerged. The informants smoked in order to resist control by others who tried to curb their smoking; to feel autonomous; and to control negative feelings such as anger and insecurity. They perceived cigarettes as helping them to maintain control over social situations and over their thinking processes. However, the reverse was also true: cigarettes had control over them. One informant declared, "Smoking controls your mind," and others described panic, anxiety and personality changes when faced with the possibility of having no cigarettes. As they described how they used cigarettes to help them gain and maintain control over their lives, it became apparent that, in fact, the cigarettes had control over them.

The second paradox to emerge was that these informants perceived smoking as one way to "look after" themselves:

they used cigarettes to keep their weight manageable, as a mechanism for stress relief, and to help them appear as confident women. However, while attempting to look after themselves, cigarettes were destroying their health and posing a threat to their unborn child.

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APPENDIX A

LETTER DESCRIBING THE PROJECT

Dear:

Further to our discussion, this letter is intended to further explain my study. This is an exploratory study on cigarette smoking during pregnancy. I will, on two to three occasions, interview pregnant women who are smokers and ask that they keep a smoking tally sheet in an attempt to understand the reasons that pregnant women have for smoking. If you choose to smoke during the interview and/or during the prenatal class breaks, I will be observing and discussing your smoking behaviour with you. I believe that as nurses come to understand reasons for smoking, they will be better able to help pregnant women stop smoking if they so desire.

The questions that I will ask will be about cigarette smoking, both prior to and during pregnancy. I am interested in your thoughts and feelings about your own smoking. Please remember that you do not have to answer any question I ask. You may decline to answer for any reason, and you may discontinue the interview any time you wish.

I will ask that you record every cigarette you smoke on the tally sheet for one week between the first and second interviews. Please carry it wrapped around your cigarette pack. At the end of the day please keep the record as part of the information that I will need to discuss with you and analyze for the study. Under the "need" column, rate how much you need the cigarette from 1 (least important) to 5 (very important). I have included a sample tally sheet in order to show possible information that might be included.

I will need your signature to indicate that you consent to participate. The demographic data will be used for descriptive purposes, but your anonymity will be protected and your name will not be used in the study. The consent form will be kept separate from the interview and tally sheet information which will be coded by number and will not have your name attached. The transcribed interviews, tally sheets and demographic data will be available only to my study supervisors and myself, although quotations from interviews may be used in the final report but no identifying data will be included. Thank you for your interest and participation.

Sincerely,

Paula Finlayson

APPENDIX B

INTERVIEW QUESTIONS

1. Recall for me, if you can, the experience of smoking your first cigarette.

   Probes:
   - Who were you with?
   - How old were you?

2. When you started smoking, who were your smoking companions?

   Probes:
   - Brothers and sisters?
   - Friends?
   - Mother?
   - Father?

3. What was going on in your life at the time you started smoking?

4. Can you tell me what purpose smoking holds for you?

   Probes:
   - How does it feel when you smoke?
   - What does smoking do for you?

5. Can you tell me about any health risks when a pregnant woman smokes?

   Probes:
   - How does this have relevance for you?
   - What do you believe about the things you have been told about smoking during pregnancy? Will these things have an effect on you or your baby?
   - Are you smoking now? Can you talk about your continued smoking?

6. What are the typical situations in which you smoke today?

   Probes:
   - When you get up?
   - After meals?
   - When you're working? Reading? Relaxing?
   - What are the situations in which you don't smoke?
   - What do you think the reasons are?

7. Have you tried to quit smoking?

   Probes:
   - How many times?
   - How did you try?
   - Did you succeed for a time?
   - How did you feel at the time?

- Do you feel that you learned something?
- What made you start smoking again?
- How did you feel when you were not successful?
- What was going on in your life when you started again?

8. Do you consider smoking a habit or an addiction?

   Probe: - What makes you think that?

9. Do you view smoking as your own choice or decision?

   Probe: - What makes you think that?

10. As a person, how would you describe yourself?

    Probes: - Friendly? Outgoing? Secure?

11. How has the media, public health teaching and the lobby against smoking affected you?

    Probe: - How did you feel during the prenatal teaching about smoking?

12. Could you rank your reasons for smoking in order of importance that they hold for you?

13. Do you want to quit smoking?

    Probe: - Why?

14. If you have reasons for quitting, could you rank them in order of importance to you?

15. Do you have any comments regarding this interview process?

16. Do you have any suggestions for questions I might have asked that would be more useful.

APPENDIX C

OBSERVATIONAL TALLY SHEET

Time in Min.	Number of Cigarettes	Proportion Smoked	Amount Inhaled	Mood	Subject of Discussion
05					
10					
15					
20					
25					
30					
35					
40					
45					
50					
55					
60					
65					
70					
75					
80					

APPENDIX D

SMOKING DIARY

No.	Date/Time	Need	Place or Activity	With whom	Reason or Feelings

APPENDIX E

INFORMED CONSENT FORM

Project Title: Smoking in Pregnancy: The Expectant Mother's Perspective

Investigator: Paula Finlayson, BScN, R.N.

M.N. Candidate, Faculty of Nursing

Supervisor: Dr. P. A. Field

Faculty of Nursing, University of

Alberta

Phone: 432-6248

The following aspects of this research study have been explained to me to my satisfaction:

- That the purpose of the research is to increase nurses' understanding of expectant mothers who smoke.
- That the investigator will ask questions about my smoking habits and patterns.
- That certain personal information will be collected related to age, education, etc., but this will not be used in a way that enables me to be identified in the study.
- That two or three interviews of approximately 60 minutes will be conducted by the investigator, in my home or at a mutually suitable location at approximately one week intervals.
- That one interview may be conducted by telephone at a time convenient to the investigator and myself.
- That all interviews will be tape recorded. Tapes will be numbered and not labelled with my name. The tapes will be transcribed and tapes and transcripts will be kept in a locked drawer. The tapes will be destroyed on completion of the study and the transcripts after three years.

- That all the content of our discussions will be kept confidential by the removal of all identifying information from the tapes and subsequent transcriptions.
- That I will be asked to keep a daily tally sheet recording all the cigarettes I smoke for one week between the first and second interviews.
- That I will make available the tally sheets for the investigator as part of the research data. This data will be identified by code number and not by name, and the information will be treated as confidential by the researcher.
- That the investigator will attend prenatal classes and observe smoking behaviour during the breaks.
- That I am free to ask questions during the project and that I can contact Ms. Finlayson if necessary.
- That I can withdraw from the study at any time without penalty or without any risk to my prenatal care.
- That I will be given a summary of the study results if I request one.

I ________________________________ hereby agree to participate in the above study.

______________________ Participant	______________________ Investigator
______________________ Witness	______________________ Date